The Builder.

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SATURDAY, JANUARY 26, 1850.

EARL DE GREY presided on the 21st at a very full meeting of members of the Institute of British Architects and visitors, when, amongst other matters, letters were communicated from corresponding fellows at Vicenza and Naples, acknowledging the honour of their election, and offering to afford facilities to members visiting their cities, with letters from the honorary secretary.*

Mr. Donaldson read a paper by Mr. H. Roberts, "On the Arrangement and Construction of the Dwellings of the Labouring Classes." Referring briefly to the overcrowded state of parts not merely of the metropolis, but of our provincial towns, the writer commenced with some general observations on points to be attended to in the construction of such dwellings:—they should be dry and well-ventilated; the principal living room should contain not less than 140 feet superficial area, and the parents' bed-room 100 feet. The height of the rooms in the country should not be less than from 7 feet 6 inches to 8 feet; and in towns 9 feet. Every room should have an opening near the ceiling for the escape of vitiated air: his experience was not favourable to Arnott's valves in the smoke flues; he preferred constructing a distinct flue; he had found the smoke otherwise return into the rooms. An enclosed porch was advantageous; if the windows had casements (for which zinc was the best material), they should open outwards, as it was otherwise difficult to keep out the rain. Commencing, then, with the establishment of "The Society for Improving the condition of the Labouring Classes" in 1844, he described *seriatim* the buildings erected by that society in the Bagnigge Wells-road, the model lodging-houses in Charles-street,—George-street, St. Giles's,—Hatton-garden, and Streatham-street, Bloomsbury; the Birkenhead-buildings; the buildings in St. Pancras, by the "Society for the Improvement of Workmen's Dwellings;" the Artizan's Home, Spicer-street; and Lumsden's Model Houses in Glasgow;—every one of which has been already fully described and illustrated in our pages. In the George-street Lodging-house, he mentioned, as proof of the effect of improved dwellings on health, that there was not a single case of cholera amongst the 104 inmates. The Streatham-street house has external galleries around a quadrangle, approached by a common staircase, by which arrangement, as we understood the paper, 70*l.* or 80*l.* per annum were saved in window taxes. The floors here are of tile arches: the extra cost of thus fire-proofing was only 12 shillings per cent. over the cost of ordinary construction. The society, he said, propose erecting another pile of town-buildings with funds provided by thanksgiving offerings. The arrangement of the Birkenhead-buildings was very objectionable: when he visited them they were tenantless, which he attributed to their gloomy appearance, through being constructed in rows so close that the sun could not penetrate. For the St. Pancras building 152*l.* per annum are paid for window taxes. In Lumsden's buildings, Glasgow, there is one window where there ought to have been three, and probably would have been but for the window tax.

The writer then proceeded to speak of labourers' cottages in the country, and quoted a passage from Mr. Dixon's "Life of Howard" already pointed out by us, as showing how much improvement may be effected by one man.

As to the design to which the Royal Agricultural Society had awarded their offered premium of 50*l.*, and which is engraved in the last July number of their journal, all he would say was, with one competent writer who had reviewed it, that he hoped no such cottages would be erected.

The recommendations to be attended to in building labourers' cottages, the writer said, are a dry foundation—gravel is better than clay,—good water,—southern aspect. Every cottage should stand on one-eighth of an acre of land. The water well should be away from the drains and manure tank,—the latter should always be provided. The materials depend on the locality. If 9-inch brick walls be used, they should be hollow, and would thus be both drier and warmer. He had used a wedge-shaped hollow brick, made by the tile machine; nine of these fill the same cubic space as sixteen stocks: 25 per cent. of mortar is also saved. Chalk, hardened with silicate of potash, may be used for walls. If of concrete, walls should be 12 inches thick; if of stone, 18 inches. Partitions should be of brick: tiles for the roof are better than slates: hollow bricks make the best floors. An air-flue should be formed for ventilation, and the upper room may be warmed by a 2½-inch pipe from the fire below. The omission of inside plastering on the walls he considered saves nothing, as it necessitates better brickwork, and it gives an appearance of discomfort. A tank should be formed to receive the water from the roof, and when it is desirable to disguise the outbuildings this may be done, *inter alia*, by casing them with split logs, with upright logs at the angles, thus giving them the appearance of a wood-stack.

Mr. Sydney Smirke, at the close of the paper, made some observations on the subject. The improvement of the dwellings of the poor was not a new consideration with him; it was his hobby before it was so publicly mooted as now; and he was first led to entertain the idea that houses for the poor might be profitably erected, on hearing that an individual who enjoyed the luxury of a private carriage, and was giving his son a university education, did so on the profits of some low lodging-houses in St. Giles's. The poor pay more than the rich for lodging and food; from Bond-street to Cheapside a more extravagant shop could not be found than the chandler's, where the poor obtained their food. These shop-keepers were real political economists; they bought in the cheapest markets and sold in the dearest. Truly the poor fleeced the poor; and it was incumbent on the more affluent classes to secure for them food and lodging on fair terms. The latter seemed in a fair way of being obtained. As to the former, he did not propose that a shop should be opened by charity to compete with private traders, but he did think that in every parish it would be well to have a Store, where the staple commodities of the poor might be sold at prime cost, to such as obtained certificates that they were really necessitous objects. The commodities obtained here would serve them as a standard of goodness. As to the construction of houses for the poor, it must be admitted that the poor were, as a class, destructive tenants. All the fittings should be as indestructible as possible. He was decidedly opposed to the use of internal plastering: it was speedily broken, and gave a dilapidated appearance. Cast-iron plates should be substituted for stone hearths, and the locks and fastenings should be simple and strong: a new lock for the purpose was needed.

In reply to a question by Mr. Mayhew, as to the price of the hollow bricks mentioned in the paper, and the means of cutting them, Mr. Roberts said they might be made in the country, he thought, for 40s. per thousand, and in some parts for 30s., exclusive of duty. In Streatham-street, where he had used them, no duty had been paid, because they were employed merely for the roof and the floors; if used in walls they would pay duty. In order to cut them, a certain number should be impressed by a string where the division was needed, before burning.

Mr. Chadwick remarked—let the size of bricks be what it might, they would pay only double duty.* He doubted the statement that floors and roofs constructed of tiles would be more expensive than by the common mode, and said Mr. Rawlinson had made calculations, shewing the former would be cheaper.

Mr. Rawlinson said he had recently been through the northern districts of England, and had found that, through the publication in THE BUILDER of a paper he had read before the Institute some time since, on hollow bricks, attempts at hollow construction were being made in various places. The difficulties were purely imaginary, both as to making and cutting the bricks. If not marked in the way mentioned, they might be cut at any part, by a slater's pick. The hollow bricks might be made at 30s. per thousand, exclusive of duty, and each would fill the place of three common bricks. The enforcement of duty stood greatly in the way of improvement. For cottage floors these hollow bricks were invaluable.

Capt. Buller, a visitor, said that he had built some cottages at 100*l.* a-pair, with hollow tiles. He found that the joints of 6-inch hollow walls would not keep out driving rains. The hollow tiles made very dry floors, but had the disadvantage, in his case, of harbouring *ants*. The tiles cost him in making 50s. a-thousand; each occupied the place of four common bricks.

Mr. Godwin said, a very important fact had been brought before them incidentally in the course of the paper, and ought not to be passed over: he meant the very injurious results of the tax on light. They had been told of one building erected by the charitable for the improvement of the health of the poor, paying 160*l.* per annum window duty! and of another where proper ventilation had not been provided because of this most injurious imposition. It was not necessary to point out its evil effects to any there; they knew from their own practice that it interfered with design, with con-

* Amongst the visitors in addition to those mentioned as taking part in the proceedings were,—Sir James Clark, Dr. Arnott, Mr. J. C. Colquhoun, Dr. Milroy, Major Boileau, Dr. Quin, Messrs. Austin, Bridges, J. Christian, Wilks, C. H. Smith, Snell, H. Eyton, Copland, Forgo, West, Dillon, Hodson, Lloyd, Robins, Wales, Hampshire, Webb, Hepburn, Boe, Eddrup, Porter, Higginbotham, Houle, Grainger, Scargill, Laxton, Rogers, Robinson, White, C. H. Griffith, Qain, &c. &c. Amongst the members present were Messrs. Scoles, Bellamy, Nelson, Donthorne, Mocatta, Parker, Knowles, Kendall, A. Mee, Mair, Penrose, Wyatt, Thomson, Hesketh, Salvin, Major-General Sir C. Pasley, Messrs. Woodthorpe, Jennings, Leicester, Papworth, Bunning, Tarring, Scott, Angell, Bury, W. P. Griffith, Cole, Eales, Gibson, Beck, Bull, Sibley, Myine, Henman, Williams, Clayton, Oliver, Judge, Fowler, Garling, Howell, Burnell, Nicholl, Henecker, Billings, and Randall.

* A "chambered brick" was exhibited, which filled the place of *fifteen* common bricks, and some one said this was truly a "closer."

struction, with convenience, and with health; but it seemed that it was necessary to do so to Ministers, who were very hard of hearing. He had reason to believe, however, that if they were now appealed to from without they might be led at all events to mitigate the tax, and he trusted that all who were present would aid in bringing this about.

The discussion was closed by an earnest speech from a clergyman present, bearing witness to the great importance attached by the clergy generally to the present endeavours to improve the dwellings of the poor.

In connection with the subject of cheap construction, a model of Melling's sash-window, wherein the upper and lower sashes are connected by racks and pinions, and one sash is made to balance the other, was exhibited.*

Earl de Grey, in terminating the business of the evening, said he wished to make a few observations in connection with the proposed national exhibition in 1851. It had been suggested that he ought, as their president, to have been a member of the Royal commission; and it was inferred that, by the omission of his name, the Institute had been slighted. He wished, however, fully to exonerate from this charge the parties who selected the commission. Mr. Labouchere had written to him, requesting him to serve in the commission; but his health being bad, and having an unwillingness to undertake anything he could not efficiently perform, he had declined the office. From what he had heard he thought the profession might consider that they had been neglected, and he had come to town that day on purpose to explain the circumstance to them personally. They might be satisfied they would have a most efficient representative in Mr. Barry.

We are glad to have this ready response to our observation on the subject. We have the greatest respect and regard for the president, and would not willingly question any step taken by him. We must be permitted, however, on this subject to say, that if his lordship was invited into the commission *as president of the institute*, we really think he ought, in justice to the body, to have assented.

PROFESSOR COCKERELL'S LECTURES ON ARCHITECTURE, AT THE ROYAL ACADEMY.

CONTINUING his comments on Vitruvius, the professor, in his third lecture on the 17th, observed that the remainder of the first book treated on the military defences of a city, the collocation of public buildings, the choice of healthy situations,—the most of which, now obsolete, would be unprofitable to dwell upon; but the second book, treating as it does methodically of all the materials of the art (which were not even now essentially changed) was well worthy the careful attention of the student. Relating to the execution of building strictly, this department of the art could not be admitted to our present course. But it might be suggested that the second book would form an admirable text for a valuable course of practical instruction in building; taking also into review the third and fourth books of the great Alberti (1450 A.D.), and the practical chapters of Phil. de l'Orme,—these, united to the vast accessions of practical knowledge which had been developed by the great engineering and architectural works executed in England within the last forty years, would constitute a useful body of ancient and modern practice.

From Alberti especially we should gather the methods of those middle ages in which such vast and novel structures had been executed, in which an economy of means was employed equally unknown to classic times, and to our own; in which latter, such lavish expense in materials and workmanship were often forced by our timidity upon the employer. It is certain that Sir C. Wren had well studied Alberti, and had often adopted the inexpensive method of foundations pointed out by him in his third book. This method had been discovered in opening the foundations of the church of St. Bartholomew, and the Exchange, rebuilt by him. Indeed, that extraordinary man would never have adorned his country with such extensive magnificence, had he been constrained by the prodigal habits of the present day in respect of foundations.

The authority of the ancients, and their regard to site, aspect, sun's rays, and natural ventilation of buildings, now regarded as obsolete, and superseded by reliance on artificial means, were well worthy the respectful study of the young architect, and would be found entitled to our gravest consideration.

It was in the third book that Vitruvius treated on the paramount element of beauty in architecture—proportion. The notion of the Greeks coincided entirely with the Mosaic declaration that man was made in the image of his Maker; and it was by analogy with the human form that the proportions and character of the orders were derived in the precepts of Vitruvius. The professor illustrated the justness of this derivation of all proportion by contrasting the baboon with the man, and again by comparing the horse with the donkey, —the profile of Apollo with that of the vulgarest nature,—the Palladian front with the warehouse,—in all of which he showed that justness of proportion arose from the subtle and delicate variety and relation of quantities,—whereas ugliness was always accompanied by equality of quantities, and a seeming clumsy disregard of that fine adjustment which is traced in the highest order of animal and vegetable creation.

The three distinctive characters of Greek orders, the virile, the delicate, and the mean between them, attributed to the Doric, the Corinthian, and the Ionic, were analogous to the diversities so dramatically figured by the prince of poets, Homer, when he presents the delicate Helen describing to Priam from the walls of Troy the various characteristic figures of the Grecian host, Ajax, Agamemnon, and Ulysses, in their special proportions; all various and typical of classes, showing by this finely drawn scene the proverbial and popular delight which the Greeks took in the varieties and distinction of character and beauty.

This *analogy* of Vitruvius had been slighted by those only who had not studied "the human form divine," in the ignorance of which, says Michelangelo, no one can pretend to understand architecture. The professor proceeded to prove this analogy, by showing how, in composing architecture, magnitude and dignity were attained precisely on the same principles that the human figure acquired them, namely, by the employment of many parts comprehended in a single form, and a variety of elements, with a scientific adjustment of their relative proportions to the entire front. Nearly all the great masters had exercised their ingenuity in proportioning the orders, but, as Wren had said, they were not the most important elements of architecture, and it was extremely desirable that the student should endeavour to compose without their aid, and so avoid the hackneyed use of them.

The form and proportions of the arch, the varieties of masonry,—rustic, isodomum, and pseudo-isodomum, were all elements for his consideration. Shinckel had much employed them; even the Gothic, though small stones were its chief characteristic, might furnish hints: in a large entrance gateway, to building of mediæval character, Shinckel had adopted the voussoirs of the eleventh and twelfth centuries, on each of which it had been the practice to carve a subject, before the stone was placed in the building, as at Rochester, Malmesbury, and elsewhere.

On each of these he had carved the insignia of the guilds and noble families of the locality with excellent effect. As in nature, so in art, the elements nicely considered, and a special character and development given to those which are most prominent, may at once convey beauty with character and use. The boar, the tiger, the cameleopard, or the antelope, though perfectly distinct, have each their peculiar character and beauty, accordant with their uses and habits.

Circumstance, material, use, and climate would always furnish sufficient motive to the ingenious and inventive mind. Thus, in the door mentioned, and those often employed in the middle ages and revival, we find in its appropriateness of decoration and character, an ample apology for the plainness of the rest.

Climate may often do this. In England, for instance, the window is the great characteristic; and so in the north of France, under Phil. de l'Orme, they grew into the most important features, and might be called the Fenestral order. The binated windows used in Mr. Hope's new house, Piccadilly, were commendable in this respect, and conveyed the idea of abundant light and large admission of sun's rays. Not so in Italy, where the exclusion or modification of light, by small windows, and the large admission of air, by large doors, were proper,—the latter affording also those delightful vistas which this colder climate does not permit.

Alberti, in his sixth book, justly complained of the obscurity of Vitruvius, and the unadorned style of his writing. "So," says he, "that he seems to write Greek to the Latins, and Latin to the Greeks." It would be found, therefore, by the student, most instructive and delightful to consult the eloquent Alberti on proportion and on beauty generally. Blondell, in his fifth book, and, indeed, every theoretical master, down to Ram Raz, had written on proportion as the fundamental principle of all good architecture; and, lastly, Quatremere de Quincy (in his dictionary), whose services to the arts, said the professor, could never be too much appreciated, and whose recent loss Europe had to deplore.

He had in this lecture treated the orthographical proportions of orders and elements, and in his next he proposed to consider the composition of those elements.

The professor exhibited a large collection of orders in their variety, and other illustrative diagrams, and a fine drawing of the temple of Jupiter Capitolinus, on the authority of Canina, showing the application of the Diastyle intercolumniation in Corinthian order, executed during the Consulate of Catullus, 260 B.C., and remarked on the importance of the propylon to the scale and effect of the temple.

ON THE SUPPLY OF THE CATTLE MARKETS AND THE ABATTOIRS OF PARIS.*

SOME errors were committed in the dimensions assigned to the different abattoirs, inasmuch as those of Villejuif, Grenelle, and Roule are too large for the necessities of the quarters in which they are situated. The expense of the buildings, as a necessary consequence, was therefore greater than it need have been. In fact, of the cattle killed in Paris, by far the greatest proportion are slaughtered in the abattoirs of Montmartre and Mesnil Montant. The real proportions are—

	Cattle.	Cows.	Calves.	Sheep.
Montmartre ..	42 per 100	34 per 100	43 per 100	50 per cent.
Menil Montant	29 ,,	44 ,,	23 ,,	27 ,,
Grenelle.....	16 ,,	13 ,,	17 ,,	12 ,,
Roule.....	9 ,,	4 ,,	12 ,,	8 ,,
Villejuif.....	4 ,,	5 ,,	5 ,,	3 ,,

The number of slaughter-houses, that is to say, of the separate divisions, is far from being in this ratio. At Montmartre there are 64, at Menil Montant 64, at Grenelle 48, at Roule and Villejuif 32 each. Of the 674,048 animals of all sorts killed in 1846, 320,024 were taken to Montmartre, 192,856 to Menil Montant, 77,678 to Grenelle, 54,138 to Roule, and 28,852 to Villejuif. Each division of the first-named abattoir then sufficed for 5,000 animals, of the second for 3,130, of Grenelle for 1,618, of Roule for 1,691, of Villejuif for 900 only. The three latter are evidently too large for the wants of the several quarters in which they are situated.

Moreover, the abattoirs of Paris were built at a period when this particular kind of build-

* See page 29, *ante*.

* At the next meeting, a paper will be read by Mr. Angell, on the "Works of Vignola;" and at other following meetings, papers by the Rev. Mr. Burgess, on the "Castle of St. Angelo, Rome;" Mr. Tite, on "Geology with reference to Architecture;" Mr. C. Fowler, on the "Ornamental Brickwork of Germany;" and Mr. Knowles, on the "Use of Cement externally." The drawings submitted in competition for the Institute medals will be exhibited in the rooms until the next meeting, when the report of the council upon them will be read.

ing had not been so well studied as it is at present. They are constructed without any regard to economy,—and form, indeed, very important public monuments. Some details had to be altered, some of the first works to be demolished, and yet they were all completed at an expense which enables the town to derive a revenue of about 5 per cent., at the present day, after paying all the expenses of the maintenance and working. The establishments of a similar nature constructed in the departments, profiting by the lessons gained in Paris, cost very considerably less. For instance, the Paris abattoirs cost 128f. per metre superficial over the whole surface, of which the buildings cost 385f. Those of Nantes cost, for the surface of the buildings, 192f. 52c; those of La Rochelle, 119f. The abattoir of Havre cost, for the whole surface, at the rate of 40f. per metre superficial; that of Caen at the rate of 61f. We may assume, then, safely, that if the town were to construct these buildings at the present day, they would be executed for half the price they cost originally.

The following table gives the most important figures relative to the surface and the cost of the different abattoirs. The first column gives the surface of the land; the second, that of the buildings; the third, the cost of the land; the fourth, the cost of the buildings.

	Metres super.	Metres super.	Francs.	Francs.
Montmartre	37,240	10,780	39,537	4,725,028
Menil Montant	44,995	12,026	132,704	4,075,487
Villejuif	27,200	6,250	54,423	2,408,753
Grenelle	32,170	8,390	121,555	3,075,121
Roule	23,660	6,250	214,088	2,500,916
Totals	165,265	43,696	562,307	16,785,305

The total sum expended was thus 17,347,612f.; but the delays caused by the fall of Napoleon, and the distress of the early years of the Restoration, increased the capital to nearly twenty millions of francs, when the interest is added. The abattoirs were begun in 1811, and finished in 1818.

The revenue of the abattoirs is derived from a payment for every head of cattle slaughtered therein, calculated at the rate of 2c. per kilogramme. It is, therefore, on the average, 6f. 90c. per bullock, 6f. 18c. per cow, 1f. 26c. per calf, and 40c. per sheep. The rent for the *fondoirs* is 1f. the 100 kilog., the melters finding their own fuel. The rent for the triperies is 30c. per tripe of bullock, and 5c. per tripe of sheep. To insure the preference to their own establishment, the town levies a toll, equal to the above, on such meat, fat, or tripes as are killed or prepared elsewhere.

In the year 1847, the receipts from the abattoirs were 1,197,634f. 33c.; the expenses were 137,830f., including *personnel*, water, lighting, repairs, inspectors of police, &c.; leaving thus to the town a clear profit of 1,059,804f., or more than 5 per cent. on the real capital.

An objection has been raised on the score that the transport of the meat from the abattoirs to the butchers' shops must augment the price. This is not really the case to any serious extent, for there are at each of them parties who undertake to transport the meat, in large quarters, for 1f. 50c. per bullock or per cow, 60c. per calf, and 10c. per sheep.

The pig abattoirs are different from those for other animals. The most complete is at Nanterre, where about 40,000 are slaughtered every year. It covers about 2,763 metres superficial, and cost 97,000f.: it consists of sixteen killing places (6 m. 75 c. by 5 m. 50 c.), and sixteen divisions, in which the hair is burned off the animals,—the invariable custom in this country, instead of scalding, as with us. The price for the use of these abattoirs is the same as for cattle—namely, 2c. per kilog. of meat, or about 1f. 50c. per pig.

Conclusions.—The details given above show that the expense of establishing proper markets need not, under judicious management, be so great as to render them bad commercial operations. The present state of the cattle market in London cannot be maintained for many years longer, and it therefore becomes important to arrive at correct ideas as to the best course to be followed. The consideration of the expense is the first, and one of the most important ones. Too much stress cannot then be laid upon the success of similar operations in other countries. We have seen that the market of Poissy pays 5 per cent. on the outlay, that of Sceaux must do so likewise, to sink the capital in the nineteen years of the lease. Why should not the city of London be as successful? They might easily raise the capital by the sale of the land occupied by the present market, or by mortgaging the ground rents of the new streets to be built thereupon. But the question does not stop here. Smithfield is a moral and physical plague spot in our wonderful London. In the interest of humanity, then, the suppression of its attendant horrors must be insisted upon. Fortunately, such a suppression need not be attended with loss to the public.

The same remarks apply to the abattoirs. In face of the results they have hitherto produced, we rest amazed that the first city in the world should still be without them. The private slaughter-houses of London are, in fact, the severest censure imaginable upon the municipal organization of our country; and, it cannot be too often repeated, a shame and disgrace to our state of civilization. In Paris, on the contrary, they form public works of great beauty, if that word be interpreted as implying fitness with the end proposed. The architecture adopted is severe, noble, massive, without useless detail; all affectation of prettiness carefully avoided. Even the choice of the materials is well studied. The different kinds of stone used are such as best to fulfil the objects their position imposes upon them; their colours are such as to produce the most consistent and picturesque effect. The wide projections of the roofs, the channels formed by the pantiles, hold colour, and give a play of light and shade which is the more agreeable, inasmuch as it is produced by simple means, and is at the same time conducive to a useful end.

A question of taste is a stumbling block with the corporated bodies in our countries. The few critical remarks ventured above may, perhaps, be displaced under such circumstances. But there still remains the commercial question; and it is marvellous that no one should yet, in the corporation of London, have found out that there was money to be made by the establishment of abattoirs, which would have improved the health at the same time as the appearance of that centre of all that is good and great, as likewise of all that is vile and detestable in Europe. Let us hope that the public feeling, so justly excited by the ravages of the cholera, will enforce an examination of this question. It is time that the abomination of uncontrolled slaughtering of animals should, like its sister abomination of intramural interment, cease to disgrace our metropolis.

G. R. B.

NATIONAL BUILDINGS.

I AM glad to perceive by a recent notice in your excellent paper that it is expected the Government will abandon in future the system of annual parliamentary grants, and create instead a special fund for defraying the expenses of our public works.

To all who are admirers of architectural art, and who are desirous of seeing this country famed for its cultivation, this cannot but prove a most welcome announcement, as it will serve to do away with one of the chief causes of failure, both in design and effect, of so many of our public buildings, namely, the begrudging on the part of the Legislature the sums needed for their erection.

It may be laid down as a general maxim that severe economy applied to the fine, or, as they are sometimes termed, liberal arts, is greatly injurious to their healthful growth and development. Had Sir C. Wren been called upon, with limited funds, to erect a cathedral upon the dilapidated walls and foundations of an ordinary parish church, we should never have had such a building as St. Paul's, and no subsequent outlay, however lavish, could have redeemed the original error; yet this would have been no more than fairly analogous to the case of Buckingham Palace; and all who recollect the parliamentary haggling concerning the estimates for the National Gallery have no just ground for surprise that it does accord with the national wish. In the instance of both these structures all elevation of sentiment and feeling suitable to the occasion was lost in the consideration of reducing the sum voted to the lowest possible amount, in order to meet the views of the economists and political partizans of the day. Under such hard conditions—to say nothing of other and capricious interference—the most gifted architect, checked and constrained as to all original grandeur of thought and conception, could scarcely but have failed to give satisfaction to the country.

In the great architectural examples of past ages, which we profess so much to admire, yet strive so feebly to imitate, no such niggard principles were allowed to prevail to the hindrance and obstruction of important national works. Pericles, Augustus, Leo X., and Louis XIV., Egypt, and Nineveh, bear witness to our own times, and at our own doors, that this is not the way to make art immortal, or to hand down to a distant and admiring posterity, the triumphs and glories of a high civilization. An accurate statistical account of the sums expended upon some of the "mighty works of old," as compared with the cost of the buildings of our own day, would probably go far to explain the reason why, in the majestic art of architectural design, we so seldom attain to the perfection to which we aspire.

But a new era in regard to the fine arts has already dawned upon us. The generous and munificent spirit which has prompted and promoted the palace of the Legislature, is but its first fruit, and is no more than in harmony with the daily improving taste and public spirit which is abroad among the great body of the people. The Government in this, as in so many other respects, is only following in the wake of public opinion and example.

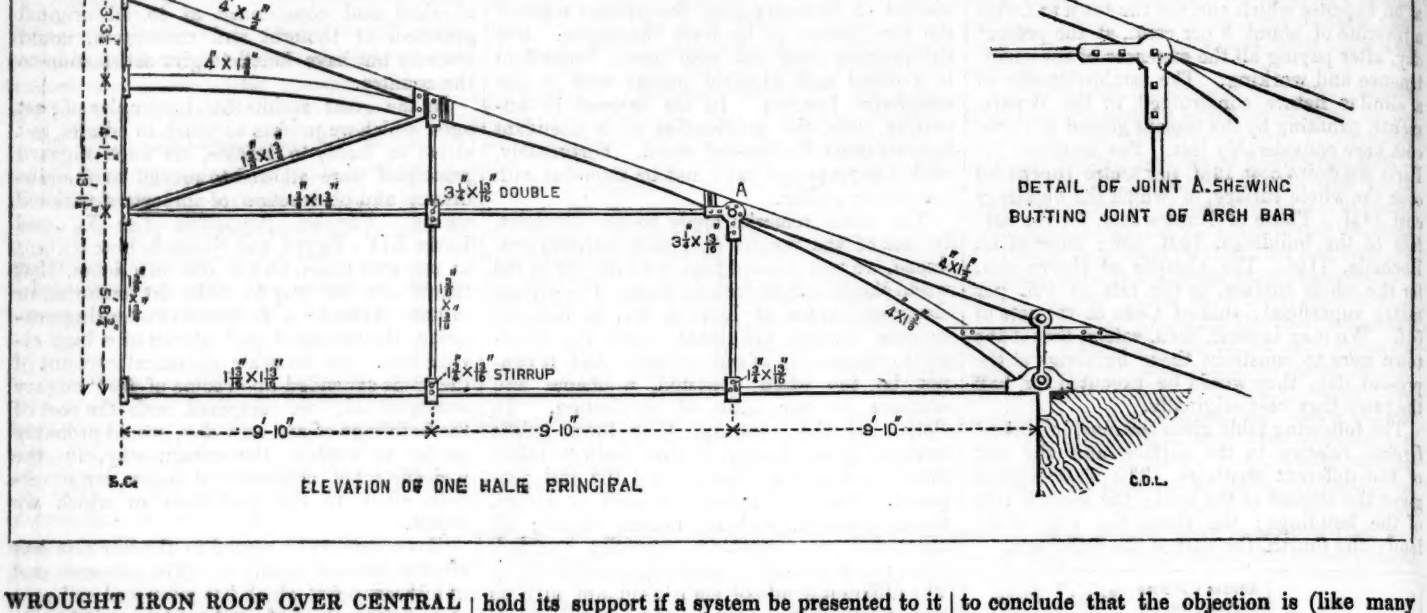
We have every needful proof that there is no lack of architectural taste, or sensibility, or genius among us. On the contrary, we have on every hand the most ample evidence of its continually increasing progress. In the mansions and club-houses, at the west end of the town; in the public-spirited and praiseworthy exertions of the corporation, and of the wealthy bankers and merchants in the city; and, indeed, in every great town and province of the kingdom, we have witnessed within the last twenty years, in this, as well as in all the other arts of design, the most surprising advance.

If to all this be added the various societies which, during the same period, have sprung up in different parts of the country, together with the numerous publications now devoted to advocating and illustrating the progress of the fine arts; we are fully justified in the assertion that the people themselves have taken the lead in this important and interesting movement. In short, the promotion of the arts of design, intimately connected as some of them are with the commercial prosperity and wellbeing of the country, has become the cause of the nation at large; and the great exposition projected by H. R. H. Prince Albert, and which redounds so much to his honour and patriotism, is but another link in the same golden chain. The Government, therefore, do well to make some provision, that, for the future, in the highest and noblest branch of the arts, and that which tends most of all to illustrate the genius of the national character, the resources of the state shall be more liberally applied whenever the public convenience demands, or the honour and dignity, as well as the future renown, of the country may require it. In our public works we build for centuries, not for years,—for the fame and benefit of coming generations, not less than for the convenience and enjoyment of our own. The triumphs of the arts of peace are destined to endure. The volcanic revolutions of France have left untouched its temples and its towers: the lowest and most ferocious *sans culottes* held them in respect: foes and conquerors stood in awe of their grandeur, and Paris is Paris still.

Dr. Johnson says he who improves the public taste is a public benefactor; and if our leading public men and statesmen take advantage of the spirit of the present time, to encourage and foster the onward movement in favour of the arts by a wise application of the mere over-droppings of the aggregated wealth of this great community, our own age may become hereafter distinguished by the happy appellation of that of "Victoria and the arts."

WATCHMAN.

WROUGHT-IRON ROOF OF LA MADELEINE, PARIS.



WROUGHT IRON ROOF OVER CENTRAL PORTION OF THE MADELEINE, AT PARIS.

THE roof of the Madeleine, designed by M. Huvé, architect, consists of a large central nave, with side chapels formed in the recesses made by the advancing piers from which the pendentives of the cupolas spring. A wall continues upon the semicircular arch in the line of the piers, which receives the wrought iron roof here shown.

The roof is continued over the recesses; but as there is not any framing, properly so to speak, in the continuation, the drawing is confined to the central span.

The span from wall to wall is 59 feet; the rise of the roof in centre is 13 feet 1 inch. It is covered with copper, fastened to wrought-iron laths, $1\frac{1}{16}$ inch deep by $\frac{1}{2}$ inch wide, which form parallelograms $15\frac{1}{4}$ inches by $19\frac{1}{4}$ inches. The laths are themselves made fast, either by rivets or by notches, to the principals, or to purlins $1\frac{1}{8}$ inch deep by $\frac{1}{8}$ inch thick, spaced 4 feet $11\frac{1}{2}$ inches from centre to centre.

We have prepared a series of illustrations of modern roofs of large span, which will appear forthwith.

WHY SHOULD NOT PERSPECTIVE PARTAKE OF THE PROGRESS OF ART?

IF perspective, "as at present taught and practised," were at all in want of a defender, it could not have summoned to its aid any one better fitted for the task than the author of the essay in the opening number of the present volume of "THE BUILDER." To every sentiment of the exposition he has given, I cordially subscribe, with the sole exception of the single line, in which he asserts the inviolability of the perspective medium. To this I claim permission to demur; it is the sole arbitrary assumption that linear perspective contains—the only direction in which improvement could be hoped for, and I know of no valid argument why the present medium should be retained, if one can be substituted for it that possesses any advantages.

One of the most popular, and at the same time just illustrations of linear perspective is, the interposition of a plane of glass between the eye and the objects to be delineated; and, while the eye remains steady in its position, to draw on the glass the outlines of the objects within the field of view. While bound by these conditions, the attempt to introduce into the representation any variety or improvement of form and outline, different from what is "at present taught and practised," is in one word impossible; and I am well content to accept this simple bond of fate, as full security against the success of any one who may embark in so chivalrous an enterprise.

The world having so long practised and enjoyed what is true, is not now going to accept a system at all deficient in the credentials of mathematical truth; neither will it withhold its support if a system be presented to it equally true, with the additional recommendations of greater beauty and a more extended range.

To avoid confusion, I will use the term "linear perspective" for that which is "at present taught and practised," and will name the representation I am about to investigate *cylindrical perspective*, as expressive of its generating medium.

Instead of the plane of glass, substitute a vertical cylinder: place the eye at some defined point of the axis, and draw on the surface of the cylinder, round the whole 360°, the form of what you see around you. We have now as truly as in linear perspective a correct representation of the aspect of nature: cut the surface of the cylinder vertically, and flatten it out till it becomes a plane, so as it may be hung against a wall. It is a picture still,—a panorama of the surrounding country; but not having been formed under the conditions of linear perspective, it is entirely emancipated from its laws, but only to become the subject of another code equally perfect, exacting the same rigid obedience to its details, and which claims for its empire a higher rank, because its influence extends over a wider range, and the laws of each system are but a couple of isolated chapters, forming a portion of the general laws of geometrical projection.

If we contemplate the picture thus produced on the developed cylinder, we shall find that straight lines in nature are curves in the representation, with only two exceptions, which are vertical lines and the horizontal line at the level of the eye; in proportion as lines deviate from these they become curved.

Now, while we have been developing the cylinder, what has become of the point of sight from which it must be viewed? We have performed the somewhat singular feat of expanding the point of sight into a straight line, and thus placed the point of sight opposite every part of the picture; for the point of sight from which to view any portion of the picture is always directly opposite to it, and at a distance from it equal to the radius of the generating cylinder.

An important question here arises: comparing this view with one drawn by the laws of linear perspective, what are their relative advantages and appearances? To a great extent this can only be decided by experiment, which, as regards the public, is yet an untried one; but there are several considerations in its favour, and, while stating them, I would not wish to evade, to deny, or to conceal, that there is one great objection that rises up (not in our front), but on either side, viz., that if the eye extend its observations sideways, the picture will appear to be error. As this is an inherent defect of the medium, and cannot be removed, the only way of dealing with it is to examine what it amounts to, and see if there be any mitigating influences to reduce it; perhaps after this examination we may be able to conclude that the objection is (like many others), more apparent than real.

The peculiar property of this projection is, that from whatever point you view this picture, the part immediately opposite the eye, and therefore most open to observation, is not merely the most accurate, but absolutely accurate; and because the proper line of sight is always perpendicular to the plane of the picture, it is to a great extent immaterial whether you are at the exact distance of the radius of the cylinder from it; in fact, it would be more advantageous to double or treble this distance, because it would lessen the error in the surrounding parts: this is one mode of lessening the objection.

The second consideration that comes to our aid is, that the portions of the view on either side of the eye, by becoming more and more oblique, are less and less exposed to observation, and thus we have another great ground of compensation, viz.—that, as the error increases, the power of observing it becomes less.

A third consideration is, that when the angle of the picture does not exceed 30 degrees, the difference between linear and cylindrical perspective is not perceptible: when the angle attains 60 degrees, the difference between the two modes of projection, though very apparent, is not very great. I now speak from the results of actual experiment and calculation; and, as we do not conveniently observe a larger angle, it follows that we do not observe the errors when they become really great.

Again, it is evident that the error produced by viewing this picture obliquely cannot be greater than the error produced by viewing linear perspective from the wrong point, which has been continually done, up to the present moment, without producing any very disastrous results.

But if, after all, when viewing the picture, a shade of suspicion should flit across the mind that in its sidelong rays truth is not so apparent, pray give this portion a more direct examination, and you will be immediately convinced of your mistake.

Therefore, against the objection, which I confess appears to me at first so formidable, we may state,—

1st. That it is lessened by increasing the distance from which the picture is viewed.

2nd. That as the error becomes greater the power of observation becomes less.

3rd. That within the field of convenient vision the error is not great.

5th. That the error is not greater than a corresponding one to which linear perspective is accidentally liable.

5th. That the error is entirely removed by a more direct examination.

Now, contrast the two: in linear perspective there is one point, seen from which it is a true representation, and only one; and this one is never specified, except by a vague judgment. Cylindrical perspective has an infinite number of points from which to view it,—all

readily found; and, from their being infinite, they are necessarily found. A number of spectators are looking at the two pictures;—taking into account the combination of distance with lateral position, I scarcely exaggerate when I say that, in linear perspective, the chances are 1,000 to 1 against any eye being in the point of sight: in cylindrical perspective, every eye looking at it must be in the point of sight! Strong probabilities in its favour!

The eye should be on the level of the horizontal line. The chances of error in this respect, of a wrong position of the eye, is the same in both systems, and how greatly it is violated may be seen in every exhibition.

The standard of excellence in all delineation is that it shall be proportional to the space it represents. In perspective, this property belongs alone to the spherical surface, a standard of excellence unapproachable, because it cannot be developed; but the cylinder is obviously a close approximation to it, perfect in the direction of horizontal length, and but slightly deviating in vertical height, which is generally the smallest dimension of the drawing.

Recurring again to the representations of linear perspective, their excellence surely is not owing solely to the fact, that they are correct projections as seen from an assumed point, for they are admired by all, though the point of view is never found; but their excellence is due to the practice which, from motives of prudence and propriety, has properly confined their limits within the bounds where the outline nearly coincides with, or but slightly differs from, the projection of cylindrical perspective, and therefore, though drawn for one point, the law of cylindrical perspective is admissible, which permits them to be seen from all, with only a small amount of error. When taken beyond this limit (about 60 degrees), linear perspective fails in its effects.

Surely (in the absence of drawings) these mathematical considerations are enough to decide a strong preponderance in favour of cylindrical perspective, as a system of wider scope and greater power, seeing that even linear perspective owes its excellence to considerations that form an alliance with it.

The principal laws of this system may be thus summed up:—

1st. All parallel straight lines have two vanishing points, which, measured on the generating cylinder, are 180 degrees apart, in which all lines that are in nature parallel to each other terminate.

2nd. The nature of the curves into which the lines are projected (except vertical lines and the horizon) is a wave, the curvature changing at the vanishing point into the contrary direction,—therefore just at the vanishing point the line is perfectly straight; from thence its curvature increases till you get to the centre, which is the point of quickest curvature; in fact, from vanishing point to vanishing point is one-half of the wavy line, so well known as Hogarth's line of beauty, but whether this is a source of excellence I will not now stop to discuss.

3rd. As regards the applicability of the system by artists and draughtsmen, it will, upon the whole, be readier than perspective "as at present taught and practised;" all the vanishing points will either lie within the picture, or not be further from its edge than one quarter of the circumference of the cylinder: we therefore get quit of the nuisance of inaccessible vanishing points, and have, instead, to arrange the curves; but as these will be drawn by a set of properly adapted templates, the change is an advantage, and any portion of the cylinder may be selected that will suit the artist's purpose—30, 60, or 120 degrees of it. The angle under which an object is viewed may be increased or dimished at pleasure by approaching to, or retiring from it.

4th. The space occupied by the representation of an object is horizontally proportional to the angle it subtends; and vertically it is in proportion to the tangent of the angle. This evident property of the system is the basis of its excellence.

For these considerations, but principally because here truth ever travels with the eye, while in linear perspective you must search for it at an eyelet whose position is most carefully concealed, I shall, as far as my own purposes may require delineation, lay aside "perspective as at present taught and practised," and substitute the cylindrical medium. Its operations are easier: if the angle be small the substitution of one system for the other will not be perceived; and if the angle be large I shall possess the pleasing assurance that I have exchanged the slender, trembling chance of any eye viewing it aright, for the absolute certainty that no eye will view it wrong!

Will artists avail themselves of the same consolation?

GEO. HEALD.

WHAT SHALL WE DO WITH OUR DEAD?

CUSTOM possesses a great—a giant-like power; it is, therefore, far from an easy matter to wage a successful war against its influences: when, however, it throws its powerful shield over practices that are dangerous to health and happiness, it becomes the duty of all who can disentangle themselves from its spreading meshes to step forth and arm themselves for a battle with it. We moderns have become so accustomed to the practice of committing our dead to the keeping of the earth, that a proposal to deal with them in another way strikes our ears with strangeness, and causes many, when they are informed that the element we would substitute for earth is *fire*, to start with affected or real horror. Let all who value health, who enjoy happiness and love life, give their earnest support to the society recently brought into existence to carry out the restoration of the ancient mode of sepulture. If there should be some who find it impossible thus violently to break through the bonds of custom, I would ask them to read and ponder well the wise advice given in a late number of this journal, and would say, in reference to that proposition, that there is nothing which will form a safer and better substitute for fire than the material therein referred to, viz., lime,—it being of such a nature that bodies committed to its embrace would be almost as truly burnt as would those placed upon the summit of a funeral pile. It is pretty certain that if we do not close up for ever our town burial-grounds, and send forth the cry of "burn, burn" (either with fire itself, or its substitute, lime), the breezes of the summer and the autumn months, which should come to us laden with the refreshing fragrance of earth, flowers, and fruits, and bearing to our ears the song of rejoicing nature, will, instead, visit us full of the noisome vapours of putrifying matter, and bring to our hearing the sighs of suffering humanity caused by the reappearance in our midst of the gaunt, the frightful spectre,—the pestilence.* LE FEU.

It is now beyond all doubt a well ascertained fact, that the effluvium generated by the decomposition of animal as well as vegetable matter, is highly prejudicial to a normal condition of the human frame. It is also certain that unwholesome vapours are emitted from churchyards, cemeteries, and other depositaries of the dead. It has likewise been observed that at certain seasons and temperatures, when disease is more general, the mortality is considerably greater in the neighbourhood of those quarters where the dead are congregated than in other districts.

The medical officer for the city has made a move in the right direction, and in his recent admirable report, has given it as his opinion that intramural burials are injurious to health, and should therefore be no longer permitted. Now, I submit, that the very reasons that have prompted him to give this advice respecting the city, will also argue against burying in the suburbs, and therefore it becomes necessary to treat the question in another way. I believe a proposition has been made to establish large cemeteries at a distance from town, but seeing that these must one day become the centres of other populations, and considering that by this plan we should be entailing on a future generation the very evils we are now striving to rid ourselves of, I insist this would be only a half measure, and not at all suitable to the rapidly increasing exigencies of this metropolis.

I now, therefore, beg to suggest, that *the sea be made the common receptacle for the dead.* This idea appears to me comprehensive, and I do not know of one feasible objection to its being carried out.

I am aware that some will raise objection to this mode of burial on the score of sentiment, but to my mind the idea is not so repulsive as that of allowing a multitude of our fellow beings to corrupt in the very midst of our homes. L. L. L.

* We have received several other letters relative to the paragraph in question, which urged the use of lime, showing a very general acceptance of the advice.

WELSH EDUCATIONAL INSTITUTION, LLANDOVERY.

ARCHITECT CONTRACTORS.

ON receipt of the first of the letters on this subject published last week, we forwarded it to the architects for explanation, and at the moment of going to press, received a reply, in which they say they "have no wish or reason to deny having undertaken the execution of the contract," and that they "think under the circumstances they acted only as professional men should do." "We felt bound," they say, "to fulfil our engagement with the Committee, and saw no other way of so doing, but by entering into the contract ourselves, to get the work carried out according to our drawings and specifications for the amount of our estimate, and to the satisfaction of the Committee, or any one it might appoint to inspect the work. It was, however, distinctly understood, that we were to be considered the architects in all respects, and agreed, that we should receive our regular commission and travelling expenses, the amount of which was inserted in the contract."

"We think you will admit we have acted only as professional men should do."

Since the appearance of our last number, we have received a second communication from Messrs. Fuller and Gingell, for which, as it leaves the main point of the matter exactly where it was, we cannot find space. Messrs. F. and G. think that, in undertaking the contract, they acted, under the circumstances, as architects should do. We are sorry that we cannot agree with them.

We have since received intimation that a provincial fellow of the Institute has contracted for the execution of a design submitted by him, thereby, as we need scarcely say, running the risk of expulsion from the body; one of the special grounds for expulsion being, "for having any interest, or participation in, any trade, contract, or materials supplied at any works, the execution whereof he may be or have been engaged to superintend."

HEADWAY IN STAIRCASES.

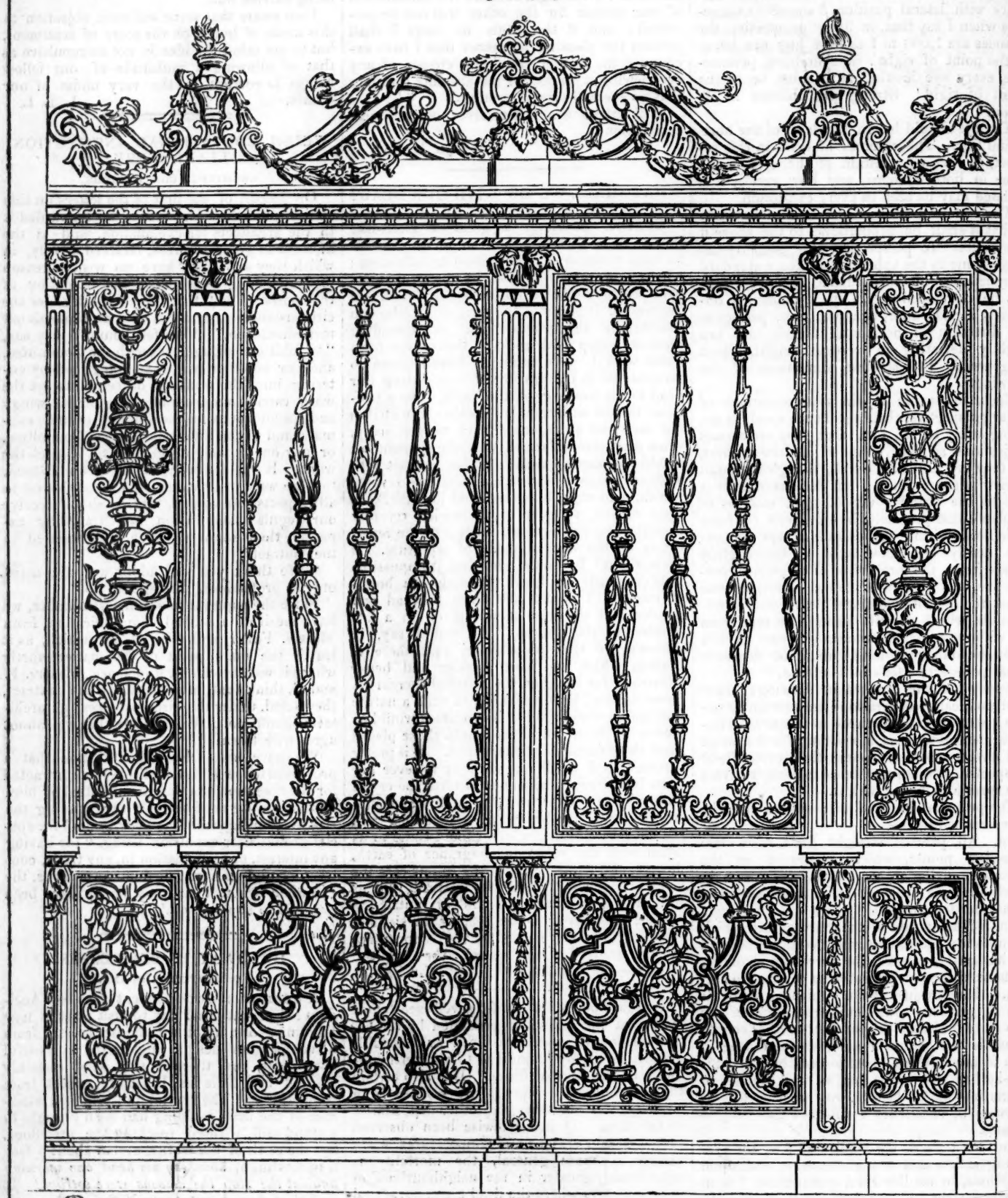
COMPETITION PLANS.

A CREDIBLE correspondent says,—"Accident led me the other day to visit a set of new buildings for a union workhouse, erected from a competition design, under the successful competitor, and there I saw what certainly startled me, little as I usually expect from competitions. The central and principal staircase of the main building had been brought to a stand-still, without reaching the first-floor, by the clerk of the works, a man about 5 feet 6 inches high, *knocking his head one morning against the step the masons were setting!* It was then found out that, if the flight were continued, a man must go up stairs on his knees to save his head—to say nothing of his hat!"—Our correspondent's statement reminds us of old Bush, of "barrack-department" notoriety, in days gone, who finding himself on one occasion in the position of the union-house architect referred to, said he would never let a staircase be begun again without having it first *chalked out on the wall!*

PUBLIC NECESSARIES.—With reference to this crying necessity, I saw in Brussels what I think may help to remedy the evil, and, in many situations, be beneficially adopted. The bottom part of the lamp iron is made to form a niche or recess, containing a urinal, and sufficiently large to screen one individual, the entrance facing the road. If such as this were placed at intervals, opposite blank walls or wide openings in the road, properly supplied with water and attended to, they would certainly be a great convenience, without, I apprehend, grossly offending any sense.—H. D.

BRONZE GATES, LISBON CATHEDRAL.

[A.D. 1755.]



BRONZE GATES IN THE CATHEDRAL OF LISBON.

THESE gates of bronze gilt were designed by Antonio Montanti, of Rome, in 1755, for one of the chapels of the Patriarcale in the cathedral of Lisbon.

The accompanying drawing is reduced from one of a very large size contained in a curious and valuable book, purchased by Mr. Weale, an account of which was published in the Quarterly Papers, with illustrations, and a description by Mr. John Woody Papworth, who tells us the book is a fine manuscript folio in a current hand, about 3 inches in thickness, of 319 pages, and lettered on the back, "Patriarcale, Lisbon, MDCCLV." The title (the language employed is Italian) reads, "Book of Sketches of the Designs of Works proposed, which are being made in Rome by order of the Court." Under each of its fifty-three heads appears the name and denomination of the profession or occupation of one individual or firm, with specifications and estimates for the execution of autographic designs inserted in the subsequent alternate pages. These drawings compose a collection of designs for what was deemed necessary by the authorities and architect for the decoration and furniture of part of the Patriarchal Cathedral at Lisbon; but whether consequent on the events of the year 1748, or whether demanded by the fire of 1755, which so totally ruined the cathedral, only an active personal examination on the spot can now decide. The architect would appear to have prepared outline pencilled drawings of his preparations, which, when transmitted to Rome to the agents of the chapter, were filled up with designs, supplied by those artists and manufacturers who, it may be presumed, were the most eminent at that time in Italy."

The style of the composition of the various subjects is the Italian version of the style of Louis XV. The following particulars accompany the drawing here given. "The said grating is 13½ palms high, 12 palms long: weight, 12,000 lbs., divided as follows:—

Copper, 12,000 lbs.	2,400 scudi	..	£510	0 0
Gold, and expense of gilding	5,900	,, ..	1,253	15 0
Expense of models, wax, &c.	900	,, ..	191	5 0
Manufacture	12,800	,, ..	2,720	0 0
	S22,000		£4,675	0 0

The value of the scudo at that time was about 4s. 3d.

R.

THE BENTINCK MONUMENT, MANSFIELD, NOTTS.

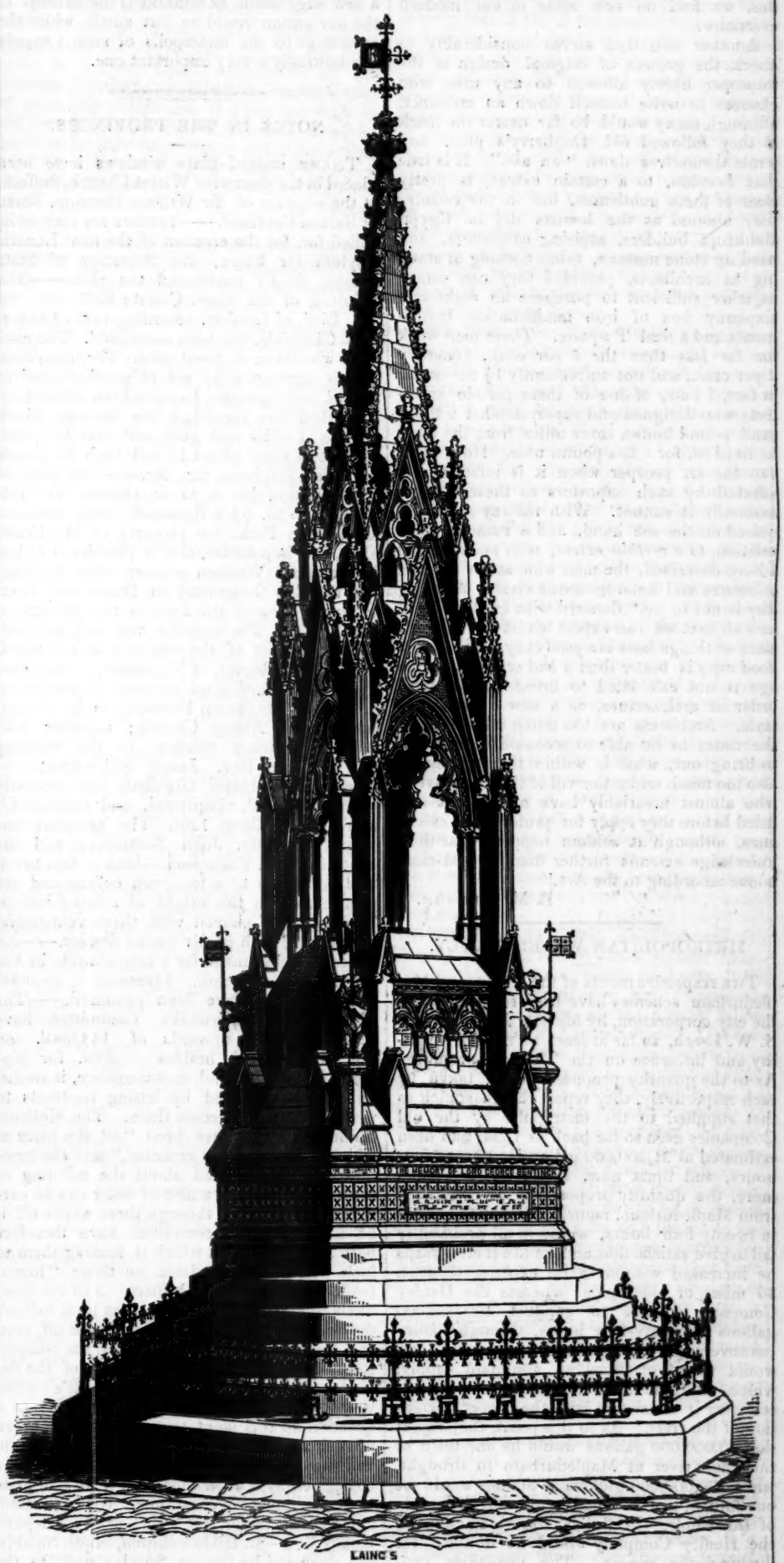
FUNDS having been raised by the county of Nottingham to erect a memorial to the late Lord George Bentinck, various propositions were submitted, amongst which were the addition of a new wing to the General Hospital at Nottingham, the foundation of an agricultural college, the building of a number of almshouses, and a monument in Southwell Minster.

Ultimately, however, the design by Mr. Hine, represented above, and which is founded on Queen Eleanor's crosses, was selected, and has been carried out in the market-place at Mansfield. It is in the Decorated or Second Pointed style of architecture. The area occupied by the bottom step is 20 feet square, the total height 52 feet. The monument is divided into three stages,—the base or pedestal; a gabled canopy, supported on pinnacled buttresses and clustered columns; and a spire pierced with traceried and gabled lights, and terminated with a gilded vane. The lower stage consists of a flight of steps, surmounted by an arcaded pedestal, with shields of the armorial bearings of the Portland family, and a recessed set-off, to receive the buttresses and columns of the canopy. At its four angles are pedestals surmounted by lions *séjants*, supporting vanes, upon which also will be emblazoned the family arms. The gables of the canopy are filled with diaper-work and emblematic sculptures. The pinnacles, gables, and spire-lights are crocketed. The original design included a statue, but this has been omitted.

Mr. C. Lindley, of Mansfield, was the contractor. The total cost, as it now stands, will be about 1,000*l*.

THE BENTINCK MEMORIAL, MANSFIELD, NOTTS.

MR. HINE, ARCHITECT.



MODERN ARCHITECTURAL PRACTICE.

SOME recent remarks in THE BUILDER lead us back to your old question, "are architects only to copy?" about which so much has been said and written that it is almost impossible to pen anything new upon the subject. There are, however, one or two points connected with it that will bear more distinctly pointing out than has yet been done, and to do this it will be necessary to begin by describing how designs are now manufactured by some part of the profession. It is something after this fashion:—A new client calls upon an architect, is duly ushered into his "own office;" he opens business by saying that he is about to build himself a country residence, over which he has cogitated some time, comes of course blown out with ideas, and loses no time in giving him (the architect) the benefit of them: states the number of rooms, how he thinks they should be placed, his notions about the stables and outhouses, and finishes up with some vague description of the style he should prefer it in. The architect, bewildered at his meaning with regard to the latter part of his instructions, shows him some drawings of houses he has already built or designed—the latter usually predominating. The architect having exhausted his "bill of fare" of style; the particular one is with some difficulty decided on, and the gentleman takes his departure, not, however, before he has asked when he will be able to have some sketches, hinting, at the same time, that the spring is fast approaching or going, as the case may be, and that there is no time to be lost. The architect replies, by stating the vast amount of business he has in hand, and, perhaps, the unfortunate illness of one of his clerks, but will endeavour to let him have "something" in a fortnight. The client is astonished at the time, thinks he ought to have the mere rough sketches in a week, and in fact is going out of town in ten days, and must settle matters before he goes. Of course the architect gives way, and the interview closes. Three or four days pass on, and the drawings are not touched, until something suddenly reminds the architect that the time is nearly up. He then marks out a rough sketch of a plan and elevation, turns them over to his clerk or pupil, with sundry directions to take the bay window from the duke's house, Bradford, the chimneys from "Hunt's Tudor," and the gables from the "Baronial Halls." The design is completed, and sent off with a showy perspective sketch, returned for alteration, sent in again, approved, and once more returned; the "mere sketches" are then given over to the taste and mercies of some articled clerk, to get out the working drawings; contracts are advertised for the *same week*; its erection is taken by some sinking builder, under prime cost,—scamped, finished, and paid for within the twelvemonth, and the whole scene finally closes with the architect's little account.

Now, does any thinking person suppose that Kenilworth, Penshurst, Wollaton, Holland House, or any of the little gems of churches studded over the country (for the system is just the same in ecclesiastical as well as domestic architecture) were designed and built in this manner? Most assuredly not, will be the general exclamation. Whole lives were then occupied in erecting one house or one church; consequently, original and beautiful designs were produced; but now an architect practises in a dozen different styles in as

many hours, and is not paid for thinking. How can such hasty and confused work produce original thought? and can we be surprised that we find no new ideas in our modern erections?

Another evil that serves considerably to check the growth of original design is the improper liberty allowed to any man who chooses to write himself down an architect, although many would be far nearer the mark if they followed old Dogberry's plan, and wrote themselves down "an ass." It is true that London, to a certain extent, is pretty clear of these gentlemen, but in the country they abound as the locusts did in Egypt. Bankrupt builders, aspiring carpenters, and used up stone masons, think nothing of starting as architects, provided they can scrape together sufficient to purchase an eight and sixpenny box of iron mathematical instruments and a deal T square. These men work for far less than the 5 per cent., generally 2 per cent., and not unfrequently 1½ per cent.; in fact, I know of one of these pseudo architects who designed and superintended a thousand pound house, three miles from the town he lived in, for a five pound note. How, then, can the art prosper when it is infected and affected by such impostors as these? Most assuredly it cannot. With railway speed required on the one hand, and a ruinous competition, *to a certain extent*, with such men as I have described, the man who steers clear of solecisms and heterogeneous masses of absurdity is not to be "damned with faint praise;" and all that we can expect whilst the present state of things lasts is a *good copy*, and surely a *good copy* is better than a *bad original*. This age is not calculated to bring forth a sixth order of architecture, or a new ecclesiastical style. Architects are too much influenced by the times to be able to accomplish, or rather to bring out, what is within them; they are also too much under the will of their employers, who almost invariably have a plan cut and dried before they apply for professional assistance, although it seldom happens that their knowledge extends further than "a first-class house according to the Act."

R. M. PHIPSON.

METROPOLITAN WATER-SUPPLY.

THE respective merits of the Henley and Mapledurham schemes have been reported on to the city corporation, by Messrs. J. Walker and S. W. Leech, so far at least as regards quantity and influence on the Thames navigation. As to the quantity proposed to be taken by each respectively, they report that inasmuch as that supplied to the metropolis by the old Companies even so far back as 1834, had been estimated at 31,500,000 gallons in twenty-four hours, and must now, therefore, be much more, the quantity proposed to be conducted from Mapledurham, namely 50,000,000 gallons in twenty-four hours, would in all probability fail to give satisfaction, and could not afterwards be increased without great expense through 36 miles of close pipe: whereas the Henley Company propose to conduct 100,000,000 gallons in twenty-four hours, through a comparatively great length of open canal, and would therefore afford an abundant supply, which might even be increased with greater economy if consistent with the proper navigation of the river. As to this point, they report that 50,000,000 gallons would be one-third of the whole river at Mapledurham in drought, while 100,000,000 gallons at Staines would be one-fourth, and at Teddington one-fifth only of the whole. In flooda, the abstraction by the Henley Company would be doubled for flushing the sewers. The quantities proposed to be abstracted in both schemes the reporters, therefore, regard as likely to interfere seriously with the navigation; that at Teddington lock, for instance, being estimated to be capable of lowering the level of the water seven inches. For this evil, however, they report that there is a remedy. "By the removal of Teddington lock, and erecting a new lock near Kingston, or about a mile or a mile and a half above Teddington, with a sill of sufficient depth there, removing the shoals so as to enable the tide to flow more freely up to the proposed lock, and deepening the river up to it, the abstraction of water would be compensated for, and the navigation of the Thames improved by the greater quantity of tidal water which would flow and ebb at every tide." By this improvement (not a new suggestion, as remarked) the damage to the navigation would be but small, while the advantage to the metropolis of such a supply is admittedly a very important one.

NOTES IN THE PROVINCES.

THREE stained-glass windows have been placed in the chancel of Wisset Church, Suffolk, at the expense of Sir William Hartopp, Bart., of Sutton Coldfield.——Tenders are now to be called for, for the erection of the new Lunatic Asylum for Essex,—the Secretary of State having finally sanctioned the plan.——The painting of the Essex County Ball-room, by Mr. Bird, of London, according to the *Chelmsford Chronicle*, has been completed. The contract was taken at about 300*l*. The decoration of this apartment, by aid of another fund of 1,000*l*. and upwards, has also been decided on. Mr. Bird has furnished the designs, which will be in white and gold, with marbled pilasters, plate glass about 10 feet high in panels and over fireplaces, &c., &c.——The price of gas at Cambridge is to be reduced by Midsummer to 5s. 6d. a thousand cubic feet.——Caversham Park, the property of Mr. Crawshay, the ironmaster, and a prominent object in the Great Western scenery near Reading, was burnt to the ground on Friday last, from an overheating of the flues in the absence of the family. The mansion was not insured, but great part of the contents was rescued.——Mr. G. Rogers, of Worcester, is now executing a stained-glass window, commemorative of the late Queen Dowager, to be erected in Malvern Abbey Church; together with another obituary window to the memory of the late Rev. James Stillingfleet.——The Kidderminster Guildhall has recently been "repaired, improved, and beautified," at a cost of about 120*l*. The architect employed was Mr. John Nettleship, and the contractor Mr. Thompson,—both of that town. The walls are of a tea-green colour, and are wainscotted to the height of 8 feet 6 inches. The ceiling is pierced with three ventilators, ornamented with papier maché flowers.——An appeal is being made for a new church in the district of Edgehill, Liverpool. £4,000*l*. out of 6,000*l*. have been promised.——The Manchester Waterworks Committee have now expended upwards of 143,000*l*. on the new works, besides 13,600*l*. for piping. Great loss and inconvenience, it seems, have been sustained by letting contracts to parties unable to execute them. The Mottram tunnel is said to have been "let at a price at which it could not be executed," and the committee were perplexed about the reletting of the work. Yet not a pint of water can be carried to Manchester through these works till it be finished. The committee have therefore been taught a lesson which is leading them to look with some suspicion on those "lowest tenders" which have hitherto been the most likely to carry off the prize—or at least to have the offer, though "unable" to carry it off, even as a burden. As to sureties for the completion of such cheap contracts, one of the defenders, in council, of the committee's endeavours to realise them, stated, in reply to a question on this point, that "the amount taken in such a case would open us up to litigation, and that would not do. The tunnel must be completed by a fixed time, and if we had gone to law we must have lost time. We negotiated, and the contractor lost a portion of his deposit money."——St. Hilda's church, South Shields, was damaged by fire on Sunday week, to the extent of 200*l*., from the overheating of a stove.——From want of care and caution, it is alleged, in the selection of a branch workhouse at Killarney, a twofold accident, of a shocking description, occurred on the 14th inst., when the building formerly known as "the college," inhabited by paupers, took fire and fell into ruins, while fifteen of the inmates are said to have been lost sight of, or in other words probably lost their lives. While this was taking place, the flooring of a detached building, inhabited as dormitories, gave way with the pressure of a mass of poor creatures seeking egress, and no less than twenty-seven young women and two nurses were instantly killed.

SOME MATTERS ARTISTICAL.

Medal to Sir Christopher Wren.—The medal prepared in honour of our great architect by the Art-Union of London, in continuation of their series, which previously comprised Reynolds, Flaxman, Chantrey, &c., is now completed. The obverse gives St. Paul's Cathedral, by Mr. B. Wyon, and is one of the most successful representations of a building on a medal ever achieved. The head is by Mr. Wilson. A medal to Inigo Jones is in preparation. This medallic series in honour of British artists was a happy idea on the part of the London Art-Union, and should be vigorously pursued. The illustrations of Goldsmith's "Traveller" for the ensuing year are nearly ready, and will form a beautiful volume. The prints of "Sabrina" will be delivered to the subscribers at the beginning of March.

The National Institution for the Exhibition of Modern Art.—For this body, formerly known as the Society for the Free Exhibition of Works of Art, a spacious and well-lighted range of four galleries are being erected in the rear of a house in Regent-street, nearly opposite the Polytechnic Institution, where the entrance will be formed. The Chinese Exhibition-room in Knightsbridge was found to be too far west. Canvass and paper, on battening, will be used instead of internal plastering, and the rooms will soon be ready to receive pictures. The principal gallery is 73 feet by 24 feet, and the second 50 feet by 23 feet. One of the rooms is 20 feet high, exclusive of the lantern-light; the others are not quite so much. Mr. R. S. Lauder is president of the society, Mr. G. Middleton treasurer, and Mr. Bell Smith the secretary.

Mr. Grundy's Exhibition of Drawings.—At his establishment in Regent-street, Mr. Grundy, the publisher, has opened a winter exhibition of water-colour drawings and sketches in oil, which will afford a great treat to all lovers of art. It contains some charming specimens of the skill of Cattermole, E. Landseer, Stanfield, Roberts, Etty, Harding, Eastlake, S. Cooper, Poole, Kennedy, Frost, Egg, Creswick, Topham, &c. &c. Every work in the collection claims admiration. "Napoleon's Eagle," by Landseer (full of poetry), Cattermole's "Columbus explaining his scheme of discovery" (full of power), are prominent items.

Mr. Grundy's exhibition is a good thought, and will, we hope, be appreciated by the public.

Liverpool Art-Union. — At the annual meeting on Thursday in last week, the Earl of Sefton presided. The subscriptions amounted to 630*l*., of which 315*l*. were set apart for twenty-one prizes. The prizes were drawn by two Blue-coat boys; and in the course of his remarks, the chairman directed the attention of the boys to Ansdell's great picture of "The Wolf-slayer," which was one of the most prominent works of art in the room, and remarked, very emphatically, "From your school came the great man who drew that picture: that is a credit to you."

The Homeric Table. — Mr. John Henning, Jun., the sculptor, has just now completed a table for Lord Northwick, of very elaborate and remarkable design. It displays a series of drawings in sepia, arranged in concentric rings, around a centre, from *bassi relievi* illustrative of passages in the Iliad, covered with a sheet of plate-glass. The angles of the supporting pedestal have figures of Achilles, Thetis, and Briseis, around the stem of a palm tree. Apollo and his steeds, with

> "The Pleiads, Hyads, and the Northern team,
> And great Orion's more refulgent beam;"—

form the centre, and then come scenes of war, husbandry, and pleasure. It does not assume the classic severity of Flaxman's "Shield of Achilles," with which the subject forces a comparison, but presents much pleasing composition of graceful flowing forms. It is now, through the good feeling of Lord Northwick, at Messrs. Hering and Remington's, in Regent-street, where the visitor may further see an interesting collection of foreign prints.

MR. LEWIS VULLIAMY, the architect, met with a very serious accident on Friday week last, in the act of crossing the road near his residence at Highgate; his foot slipped on the ice, causing a fracture of the thigh bone.

ARCHITECTURAL NOMENCLATURE.

IT seems the fashion now to disparage the correctness of the terms which, since the revival of our ancient architecture, have been in use to designate its different phases, and the term "Decorated," as applied to the most beautiful period of its progress, has been often objected to before "Zeta's" letter. This term Decorated was designed not to mark a style throughout Pointed Architecture, but as it was originally promulgated "Decorated English," as applied only to the complete Gothic of our own country.

The Decorated style in this country was formed in the addition of lines giving softness of internal figure to the masses obtained by the mere working lines in the earlier style. The architects of that age give the greatest beauties (I may say wonders) of constructive effect, without seeming to be aware of the great proofs of their skill they were showing, and thus giving an allowed proof of their genius. Later architects produced, perhaps, more wonderful effects, but we lose the pleasure we had in following their predecessors, from the great number of upright lines, evidently for the purpose of support, which they introduced, and then, as in their fan tracery, with great disingenuousness forsaking them and evidently making use of some concealed means of support. The Decorated English may have no more work in it than the Early English, but the work is applied in a manner to produce more elegance by the greater freedom and play of the lines introduced. The term Decorated is derived from a Latin word referring to elegance rather than adornment, and this aptly describes the style to which it is applied. Those who, like myself, have felt the relief to the eye on entering a Decorated church after a series of Perpendicular churches, will better appreciate the title than those who study their country's architecture in the present metropolitan improvements. It is like coming at last to the real building after long watching the progress of the scaffolding. With regard to our term Perpendicular, I scarcely think we can mend it as a descriptive one (and as such both of them are intended), as it describes not only more than two-thirds of the whole superficies of tracery, but the fan tracery itself is composed almost entirely of perpendicular lines, and only from the principle of their construction radiating instead of parallel. R.

A STRUCTURE FOR THE 1851 EXHIBITION.

WE mentioned a short time ago that Mr. Turner, of Dublin, who constructed the new palm stove in Kew Gardens, had, in conjunction with his son, Mr. T. Turner, prepared a model of a structure of iron and glass for the 1851 exhibition. Since then we have seen a plan and elevation of the design, which shows that it is to occupy an area 1,440 feet long and 1,060 feet deep. The main building, which is, in truth, an enormous greenhouse, 1,020 feet long, has five domes of iron and glass; the central one 200 feet high to the crown, the others 150 feet high! Covered ways surround the whole, and railways are provided as well to convey the visitors from one end to the other, as the objects of manufacture to their standing place. Two steam engines are to give life to the machinery, and at the same time drive in an ample supply of fresh air. The projector's idea is that it should be erected *permanently* in the Green-park by a Joint-stock Company, who would let it for the purpose, and at other times use it for monster concerts, "winter garden," &c. &c. The cost is estimated at 300,000*l.*, and Mr. Turner states that there are parties ready to carry out the design on receiving the site for it free. This, course, however, is obviously out of the question; whatever we may think of the building itself.

SHIP BUILDING IN THE UNITED STATES.—We learn from the American papers, that the amount of tonnage built in the United States in the year ending on the 30th of June last, was 256,577 tons, consisting of 1,547 vessels: of those 198 were ships, 148 brigs, 623 schooners, 208 steamers, and 370 sloops and canal boats.

INTERFERENCE WITH FOOTPATHS.

"For every evil underneath the sun
There is a remedy, or there is none.
If there be one, seek and find it;
If there be none, never mind it."

YOUR correspondents have drawn public attention to the disgraceful state of the footpaths in various roads, occasioned by the practice of heaping the stercoraceous scrapings of the roads in hillocks thereon, not only to the discomfiture of the inhabitants, but oftentimes to the imminent danger of the pedestrian traveller. The evil is surely one of no ordinary character, and requires to be met by some extraordinary effort on the part of the resident ratepayers.

The Camberwell district, which is not very remote from that of your correspondent, was some time since infested much in the same way, and the trustees of the Surrey and Sussex roads, as well as the justices at quarter sessions, were appealed to upon the subject by petition, signed by 450 ratepayers.

The plan suggested by the petitioners was to form a ledge between the road and the footpath, for the use and bearing of the material in question,—and its adoption proves to be most efficacious. If your correspondent will indulge himself with half-an-hour's run some fine morning, he may have ocular demonstration of the fact as stated by Q. S.

NEW SUSPENSION BRIDGE OVER THE RIVER LOCHY.

A SUSPENSION bridge by Mr. Dredge, on his principle, has been erected over the river Lochy, between Fort William and Corpach. A dinner was given on the occasion, and we learn from the speech of the engineer that the span is 250 feet; platform nearly 17 feet wide; clear roadway 15 feet; the masonry at the base 28 feet by 16 feet, and built solid up to the roadway, 19 feet high, above which each arched entrance is 12½ feet wide and 20 feet high; and the top of the piers upon which the chains rest is 24 feet above the roadway, the whole tapering three-fourths of an inch to the foot in elevation, excepting four feet of plumb which supports the arches. It is built of granite rock-work. The versed sine of the bridge is one-tenth of the chord line, and it consumed 40 tons of wrought and cast-iron. The section of the four chains at the top of the piers is 50 inches, which taper to O at the centre of the bridge. The platform contains 3,600 feet of surface, which will admit of 360 head of cattle being upon it at one time, and this will be the heaviest load to which it will be subject. The foundation stone was laid on the 6th of August last, and deducting the time lost by inclement weather and short days, the bridge was three months in building. The cost was about 2,000*l.*

Books.

Tubular and other Iron Girder Bridges, particularly describing the Britannia and Conway Tubular Bridges; with wood engravings. By G. D. DEMPSEY, C.E. Rudimentary Treatise. Weale, Holborn.

Truths and Tubes on Self-supporting Principles: a few Words in reply to the Author of High-ways and Dry-ways. By THOMAS FAIRBAIRN. Longman and Co.; Simms and Denham, Manchester.

THE first of these little books contains an excellent digest of the experiments and other proceedings which led to the discovery of the cellular self-supporting principle, and the discarding of the principle previously designed for the great iron bridges on the Holyhead line of railway.——As for Mr. Fairbairn's response to Sir F. B. Head's "High-ways and Dry-ways," in the *Quarterly Review*, we need not again enter on this already vexed enough question, which may now be safely allowed to fall asleep with the assured hope of a reawakening rid of all ruffled feeling, restored to its own right senses, and standing on its own proper feet and inches.

BRADFORD WORKHOUSE COMPETITION.—The decision appears to rest between Mr. Atkinson, of York, and Mr. Lockwood, of Bradford.

Miscellanea.

BUILDERS' BENEVOLENT INSTITUTION.—We are glad to hear that the proposed anniversary ball in aid of the funds of this Institution, already mentioned by us, has been taken up very warmly, and promises a most successful issue. Between five and six hundred tickets are already disposed of: the total number, however, ought not to be less than a thousand. A list of the stewards will be found in our advertising columns, from any of whom tickets may be obtained by respectable parties, and we advise such of our readers as are willing to do good, and spend a pleasant evening by the same moderate investment of capital, to lose no time in applying. If this ball enable the committee to commence the erection of an asylum, it will be dancing to some purpose: we earnestly hope it may.

THE BUILDING ACT.—In the preparation of Acts of Parliament, it is generally found that those which are of general and important character, have less attention paid to their provisions than ordinary ones; there is not only ambiguity in the wording of them, but the dubious construction of their clauses is the reason for the creation of ministerial officers to elucidate the meaning of the legislature. In a matter of so much importance as the Building Act, the provisions should at any rate be clear to the comprehension of the architects of this metropolis, yet strange to say, none are now permitted to comprehend them but the district surveyors. As this Act will come under the revision of the legislature in the ensuing session of Parliament, I do hope that more care will be taken in the several sections, so that they be made lucid to all professional men, and that the Committee do not confine their inquiries to district surveyors alone, but to all parties interested in so important a subject. The difficulties and mischiefs which have arisen from the present Act, far exceed those of the original one, and demand a very full inquiry, so that the reading may be as comprehensible as the laws of Moses, and the monopoly of the district surveyors' self-interpretation be entirely abrogated.—AN ARCHITECT OF THIRTY YEARS' STANDING.

INSTITUTION OF CIVIL ENGINEERS.—On Tuesday, Jan. 22, Mr. William Cubitt, President, in the chair, the paper read was, "On the Periodical Alternations and Progressive Permanent Depression of the Chalk Water Level under London," by the Rev. J. C. Clutterbuck. The general conclusion drawn from facts was, that the rapidity of exhaustion from Artesian wells under London greatly exceeded the rapidity of the supply; that the amount of defalcation was marked, and could be measured by the extension of a progressive permanent depression, proving that the supply of water from the chalk stratum became each year more precarious, and less to be depended upon, even should there be no addition to the Artesioid wells in and around the metropolis. On the other hand it was contended, that from the great extent of surface whence the chalk derived its supply, there might be such a surplus store of water as would warrant any amount of pumping for the domestic supply for the metropolis. The discussion was announced to be continued at the meeting of Tuesday, January 29, which would be entirely devoted to it.

THE "NE PLUS ULTRA STOVE" seems to have almost brought another victim to his *ne plus ultra*, as recorded in the *Times* last week. To endanger life by the advertised assurance that any such stove may safely be used in a sitting-room without a chimney or a pipe through which the deadly "choke damp" of combustion may freely escape, implies either reckless and criminal falsehood, or a scarcely less culpable ignorance on the part of the advertisers and disposers of the article. A stove "not only smokeless but self-consuming" is an absurdity in the sense *implied*, namely, that it either will or can "consume" its own dangerous choke damp, or carbonic acid gas. No such stove either is, or ever was, or probably ever will be made. The actual process is in truth the very contrary of that into which it is designed, or at least likely, to deceive the public,—it is a "consuming" of charcoal, smoke, &c., *into* the dangerous agency, not out of it.

PROJECTED WORKS.—Advertisements have been issued for tenders, by 9th February, for the alteration and improvement of the Swan Inn, Kidderminster; and by 29th inst., for a survey and valuation of all the property in the parish of Christchurch, union of Whitechapel.

HAMBURG TUNNEL ON THE HUDSON RIVER RAILWAY.—The great tunnel at New Hamburg, says the *Evening Post*, connected with the Hudson River Railway, is nearly completed. It is a gigantic work, measuring 830 feet in length; at the south end is a cut 500 feet long, 30 feet wide, and 50 feet deep, all through the solid rock before reaching the tunnel, which is 19 feet high and 24 feet wide. Through the tunnel the passage is gloomy enough to represent the most dangerous regions, darkness being relieved only by the light of candles, and through two shafts sunk to it, one 70 feet in depth, the other 56, through which a glimpse of daylight may be obtained; but on emerging at the north end, one other deep cut is found, nearly as formidable as that at the south, being 200 feet long, and 70 feet deep, making the entire deep cutting through the rock, all inclusive, no less than 1,530 feet. There are 400 men employed on this work. Six thousand kegs of powder, of 25 lbs. each, have been used for blasting in fourteen months, and nine blacksmiths' shops are constantly occupied with repairing the tools, &c. The work goes on night and day with great expedition.

ARCHÆOLOGICAL INSTITUTE.— At last meeting, Mr. Ouvry in the chair, a paper by Mr. E. A. Freeman, "On the Anglo-Saxon remains in Iver Church, Bucks," was read by the secretary. The Hon. W. Stanley then gave an account of recent discoveries in North Wales, and exhibited some copper mining tools and bones of animals, sent by Lady Erskine. The Rev. W. Haslam sent some notices connected with the Cornwall tin works. A discussion then took place on the early use of Arabic numerals in England. The Rev. F. Dyson presented a plan of the discoveries at Great Malvern. Various relics were afterwards exhibited, and amongst a large collection of *fac-similes* from sepulchral brasses, one, a portrait of the architect who erected the earlier portion of the church of St. Ouen, at Rouen, excited much interest from its striking design.

CHELTENHAM AND THE BOARD OF HEALTH.—We learn from the *Gloucester Chronicle*, that the town commissioners have issued a lengthy reply to Mr. Cresy's report, in the form of a memorial to the General Board of Health, and proceed to show "that the superintending inspector based his calculations with respect to the population and comparative mortality of the town upon imperfect and erroneous data—partly upon a statement said to have been drawn up by Dr. Wright for the Board of Guardians, and by them rejected, —that the whole of the report is calculated to convey an opinion that the town, instead of being one of the most healthy and agreeable residences in England, was one of the most objectionable,—that the remarks with regard to the supply of water occasionally exhibit unfairness,—that the plan proposed by the inspector with regard to the sewerage is surrounded with serious difficulties, if not actually impracticable."

MURAL PAINTINGS IN ENGLAND.—The January number of the *Art-Journal* (full of illustrations and interesting matter) contains an article on mural paintings in England, by Mrs. Merrifield. Alluding to the admirable state of preservation in which so many wall paintings are found in our old churches, the writer justly urges the importance of arriving at an exact knowledge of the mode of painting adopted, the medium, &c.

DESTRUCTION OF HUMAN LIFE.—In a paper recently read at Belfast, by Dr. Stevelly, on the hot-blast furnace, it was stated, that of the men employed at this work, especially the "puddling furnace," not one ever lived beyond 28 *years of age!*—Can science do nothing in this case? It has done much in others similar.

THE ROMAN REMAINS IN MOULSHAM.—On account of the frost the excavations have been suspended for the present. Further traces of the villa, with coins, and fragments of tiles, pavements, domestic articles, &c., were turning up, and no doubt the search will be resumed.

THE VIADUCT OF THE GREAT NORTHERN RAILWAY AT PETERBOROUGH ACROSS THE RIVER NENE, will be a substantial structure; the bridge will be of cast-iron, formed by three arches, with a span of 66 feet each, resting on two supports, and sustained by twenty-four fluted pillars, fixed by atmospheric pressure. At the north end of the bridge, four brick arches will intervene between it and the embankment leading to the station at Sexton Barns; three arches of the same dimensions in the meadow will divide the bridge from the passage over the two railways running at a lower level, viz., the London and North-Western, and the Syston and Peterborough lines, which will be supported by twelve columns; and between this passage and the embankment to the south will be erected a series of nine arches, similar to those on the north.—*Lincoln Mercury.*

THE INVENTOR OF THE BLOCK MACHINERY.—Although, as your correspondent "N. R." says, too much may have been claimed for the late Sir M. I. Brunel as the inventor of the block machinery, yet Walter Taylor's apparatus for making blocks is believed to have been confined to some circular and reciprocating saws, and some boring tools,—so that many of the operations in the manufacture of blocks were performed by hand with more or less accuracy. In the manufactory at Portsmouth, on the contrary, invariable accuracy is given to every part of a finished block by means of appropriate machinery, most of it invented by Sir Isambard, not copied from Walter Taylor. Should your correspondent hold a contrary opinion, it is hoped he will redeem his pledge, and give a statement of the authority on which he claims the invention for Walter Taylor.—B.

SMITHFIELD MARKET.—The commissioners for inquiring into the state of the butcher-markets of London are proceeding rapidly with their labours. Their report, it is said, will contain a complete condemnation of Smithfield, on which, perhaps, an order in council may issue for its abolition. Should matters proceed in this way, says the *Athenæum*, there is talk of railway cattle markets being formed at the following railway termini:—Euston-square, Paddington, Shoreditch, and London-bridge. These four great markets are, if made, to be connected with each other, and with such other points of the metropolis as may be found necessary, by means of the electric telegraph, with a view to keeping each of them well informed, from hour to hour, as to the prices of meat and the quantities of cattle sold in the others.

SANITARY STATE OF SOUTHAMPTON.—Mr. Ranger, the superintending inspector under the Board of Health, has concluded his inquiry at Southampton. It lasted *twelve* days: in taking leave, the inspector commented in strong terms on the fact, that the parochial medical officers had refused him any aid: it was the first time, in the discharge of his duty, that he had had to make such a complaint. The mayor, clergy, and authorities, he said, had rendered him much assistance.

VENTILATION.—A correspondent of the *Mining Journal* says,—To obtain fresh and pure air from without is an easy process; but to get rid of the impure and mephitic air lingering near the roof is not so obvious. I use a trumpet-mouthed pipe, its orifice is at the ceiling. This, composed of tinned iron, enters the wall and descends the chimney, and its lower orifice, curved downwards, enters between the bars of the grate below: by reversing the orifice below, no ashes will enter the tube. All the deleterious air is thus withdrawn from the room and the space which it occupied and where it lingered, and is constantly consumed in the grate. This arrangement, simple and inexpensive, acts with all the power of an exhausting pump. A gutta percha tube might descend by the side of the bell-pull, and be connected with the fire below, by means of an iron or copper tube, while the gutta percha may be made sufficiently ornamental.

SOCIETY OF ARTS.—At an ordinary meeting on the 23rd inst., Mr. James Walker in the chair, Mr. A. G. Findlay read a paper on "Artificial Breakwaters, and the Principles which govern their Construction," which was illustrated by plans and diagrams, and by a model in mahogany, representing the system of structure pursued in the works at Dover harbour.

DWELLINGS FOR LONDON CLERKS.—Amidst the varied ideas and operations of individuals and societies, on the subject of domestic buildings, it is very desirable that the case of the London clerks should receive attention. We number probably some thousands of unmarried men. Spending the day in the service of our employers, we dine near the scene of action, and for the rest of our time the only thing we can call a home is a rented apartment. The disquietude and discomforts of a London lodging-house have been vividly exhibited by popular writers, and are fully admitted. But must we and our successors continue to endure these inconveniences? Would it not be possible to provide for us more comfortable, yet not more costly accommodation, at a rate affording remunerative profit to the capitalist? A building for such a purpose might offer chambers of varying degrees of eligibility and expensiveness, but it would probably be found that for the ordinary demand it might suffice to provide a single room of moderate dimensions, well appointed with fire place, closets, &c. &c., and opening widely on one side to a dormitory just large enough to contain a compact iron bedstead, and perhaps washing apparatus. There should be also convenience for keeping and preparing the necessaries for the morning and evening meals, and for dinner on Sundays: the requisite amount of female attendance might be supplied in the absence of the occupant by a "bed-maker" as at Cambridge. T. F. T.

PRESERVATION OF MONUMENTS IN FRANCE.—The Paris correspondent of the *Literary Gazette* says:—"In France there are commissioners and well-paid functionaries by the score to watch over public monuments, to restore and preserve antiquities, &c., &c. But according to all accounts, commissioners and functionaries not only cause the expenditure of a vast amount of money which might be much more advantageously employed, but positively perpetrate, either from ignorance or wilfulness, irreparable mischief. For example, one of the daily journals states as a fact that a little while ago some ancient and valuable frescoes were discovered in the church of *Notre Dame du Puy*. To display these frescoes, architectural repairs were made to the enormous amount of 400,000 francs (16,000*l.*); and when this was done, what think you the sapient architect, with the permission of commissioners and government functionaries, did? Actually, *scraped out the frescoes!*"

WATER TANKS.—In answer to your correspondent "B.," relative to water tanks, he will find Seyssell Asphalte the most effectual thing for laying the bricks in, and rendering the surface with afterwards; if the brickwork is 4 inches thick, laid in asphalte, with an outer 9-inch of common brickwork, it will stand by itself unsupported, of the size he mentions. I have tried this at Holland House, and it answers perfectly.—J. H. BROWNE.

BATHS AND WASHHOUSES FOR THE POOR.—We are happy to state, that at a very large and influential meeting of the vestry of St. Giles's-in-the-Fields and St. George's, Bloomsbury, held on the 14th instant, it was resolved almost unanimously, forthwith to erect baths and washhouses in these parishes, agreeably to the Act 9 and 10 Victoria, c. 74. We hope that other metropolitan parishes will follow so good an example.

TENDERS

For the completion of two houses, now in carcase (which must be very nearly all taken down), situate in the Clifton-road, Old Kent-road; and also for erecting six houses, 25 feet frontage, 24 feet deep, for Mr. E. Ball, advertised for competition in our paper of the 12th inst.; Mr. G. S. Corbett, Architect.

	Six New Houses.	Two Carcases.
Beadle	£2,670	£710
Darby	2,162	800
Slade	2,022	640
West	2,010	530
Woodward	2,348*	—
Tarrant	1,739	535
Harris and Dean	1,525	320

For the alterations and repairs to seven houses in Bermondsey-street; Messrs. Castle and Jayne, architects. The quantities were furnished.

Wells	£1,399
Battenbury	1,228
Burt	1,210
Haynes	1,204
Coleman	965
Wills (accepted)	960

* This includes carcase.

MEETINGS OF SCIENTIFIC BODIES

To be held during the ensuing week.

TUESDAY, Jan. 29.—Institution of Civil Engineers, 8 p.m.

WEDNESDAY, 30.—Society of Arts, 8 p.m.

THURSDAY, 31.—Royal Society, 8½ p.m.; Society of Antiquaries, 8 p.m.; Royal Academy, 8 p.m.

FRIDAY, Feb. 1.—Archæological Institute, 4 p.m.; Architectural Association, 8 p.m.

TO CORRESPONDENTS.

"*Iron.*"—A surveyor asks, "How long ¼ inch sheet-iron may be expected to last in water."

"*Gas from Water.*"—We can only refer for information to the usual chemical authorities, and to THE BUILDER itself.

"F. W. P." (statement is too general. It is scarcely to be supposed a committee would return drawings *without looking at them*; curiosity alone would prevent this), "J. L.," Manchester (his views have been stated by others), "C. E." (Potter's, South Molton-street), "J. L. G.," "A. B. and C. D.," "M. M. W." (the place must be seen, to decide best mode. Ask a respectable plumber), "J. B.," Hamburgh, "R. R.," "M. J. and Co." (too late), "R. B." (the effect of newly-built houses on health was discussed in a former volume of our journal), "R. J. S.," "R. S. S." (we are sorry that we cannot assist), "J. J. L." (shall come in, first opportunity), "W. W." (shall be forwarded), "D. R. H." "J. B.," "P. H. H.." "J. W. P." (too late for present number), "A. A." (declined), "Quondam" (we shall be glad to receive the description promised). "The Decorative Arts of the Middle Ages," by Henry Shaw, F.S.A. (Pickering: 1850); "Baily's United Service Record" (Cornhill); "Instruction in Illumination and Missal Painting," by D. de Lara (Ackermann, Strand); "Proposal for Supplying Lancaster with Water, and Improving its Sewerage," by E. Sharpe, M.A. (Lancaster, 1850); "Remarks on the Water Supply of London," by Sir William Clay, Bart.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

THE NILE.—ABOU SIMBEL.—The new Tableau, showing the interior of this Temple by torch-light, is added DAILY to the exhibition of the GRAND MOVING PANORAMA of the NILE, comprising the whole of the stupendous works of antiquity near the banks of this sacred river. Painted by Warren, Fahey, and Bonomi, from studies by the latter, made during a residence of many years in Egypt.—Egyptian Hall, Piccadilly, at 3 and 8.—Stalls, 3s. Pit, 2s. Gallery, 1s.

ROYAL POLYTECHNIC INSTITUTION.—The First of a Series of Illustrated Lectures, by Dr. Bachhoffner, on the Philosophy of Scientific Recreation, Daily at Two o'clock, and in the Evenings at Eight.—An entirely new Set of Dissolving Views of London in the Sixteenth Century, and as it now Is, with a Descriptive Lecture, Daily at half-past Four, and in the Evenings at a quarter to Ten.—The Views of Rome, including New Views of the Interior and Exterior of St. Peter's, with Dioramic Effects, are shown Daily at One o'clock.—Lectures on Chemistry, with brilliant Experiments, by Mr. Ashley.—Experiments with the Diver and Diving-bell.—New Exhibition of Chromatropes.—The Machinery, Models, &c., explained.—Admission, 1s.: Schools, half-price.

BUILDERS AND CONTRACTORS.

TARPAULINS for COVERING ROOFS during Repairs. SCAFFOLD CORD and every description of ROPE used by Builders upon the lowest terms. Marquees and temporary awnings on sale or hire. Orders per post receive the most prompt attention.—WILLIAM PIGGOTT, 115, Fore Street, City, Manufacturer, by Appointment, to Her Majesty's Honourable Board of Ordnance.

PAVING, 2s. 9d. PER SQUARE YARD. Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 14, JOHN-STREET, ADELPHI.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

MINTON and CO.'S ENCAUSTIC and other PATENT TILES for Churches, Entrance Halls, Conservatories, Balconies, &c., Antique, Geometrical, and Alhambric Mosaics, manufactures of a highly decorative character and extreme durability, Slabs and Tiles for Fireplaces and Hearths, Covings for Grates, Door Furniture, White Glazed and Ornamental Tiles for Baths, Dairies, and Kitchen Ranges may be had in great variety at their Warehouse, 9, Albion-place, Blackfriars-bridge, London, and at their Manufactory, Stoke-upon-Trent, Staffordshire.

WHITE SUFFOLK and RED FACING BRICKS of superior quality. Moulded bricks to any pattern.—Apply to Mr. BENJAMIN GOUGH, 37, Newington-crescent, Newington Butts.

N.B. Cowley and Kent Bricks of every description, and Kentish Ragstone direct from the quarries, at a reduced price.

FIRE BRICKS, GREAT FALL.—WARD and COMPANY, Honduras Wharf, Bankside, London, have the pleasure of informing the trade, &c., that they have just landed SEVERAL CARGOES of their best manufactured FIRE BRICKS, in Stourbridge, Newcastle, and Welsh. Purchasers should avail themselves of the present low prices. STOURBRIDGE BRICKS, admitted to be the best in use, as proved by houses working the greatest heat, 6*l.* 5*s.* per thousand. Their highly celebrated NEWCASTLE ditto, in such general consumption in gas works, breweries, by engineers, and others, 4*l.* WELSH ditto, very superior, from having less iron in them than usual, 4*l.* 15*s.* Lumps, Tiles, Shield Guards, Retorts, Fire Clays, and Loam equally cheap. Cowley bright square Stocks, 35*s.* per thousand; Patent Malting Tiles, Windsor Oven ditto and Bricks; Country Pantiles, 50*s.* per thousand, plain ditto, 32*s.*, all other red goods: white and red Sanitary Pipes and Shapes, Dutch Clinkers, Suffolk Bricks, Dorking Lime, Concrete, Gravel, and river Sand, by freights or loads. Goods made to pattern in twenty-one days.

A liberal Discount for Cash.

BRICKS.—In consequence of the low price at which Brickmakers have, for some time past, been purchasing Ashes and Breeze, H. DODD is enabled to offer his bricks, which are of good quality, at the following low prices; and as his fields are only a quarter of an hour's walk from the City, H. D. earnestly requests purchasers will favour him with a visit, in order to inspect his stock and to judge for themselves.

Marle Cutters	80*s.* per thousand.
Yellow Seconds	52*s.* 6*d.* ,,
Pale Seconds	50*s.* ,,
Paviors	42*s.* ,,
Pickings	35*s.* ,,

Marle Place, Half-washed Stocks, and Place Bricks, at equally low prices. These bricks are sound, well burnt, and unusually free from defects; a very large proportion of the Stocks being suitable for external facing. They will be delivered at the above prices anywhere within two miles of the fields.

Apply to HENRY DODD and Co., at the Counting-house, Hoxton Brickfields, Grange-walk, near the Rosemary Branch, Hoxton.

N.B. Red Pit Sand, of approved quality, constantly on sale, upon reasonable terms. In the erection of walls, where it is desirable that the work should be kept as free from damp as possible, this sand, from its not containing any saline matter, is acknowledged to be preferable to river sand.

BIRMINGHAM PLATE GLASS COMPANY are supplying PLATE GLASS of a superior quality, at an unusually moderate rate of charge. For estimates apply at their warehouse, No. 141, Fleet-street. Rough Plate, ¼, ⅜, ½, ⅝, and 1-inch thick.

PATENT PLATE GLASS.—HETLEY and CO. beg to inform Architects, Builders, and the Trade generally, that their new Tariff of PRICES for the above is now ready, and will be forwarded on application. A REDUCTION of about 40 per cent. has been made on the usual Glazing sizes.—Sheet, Crown, and Ornamental Window-Glass Warehouse, 35 Soho-square, London.—ROUGH PLATE GLASS.

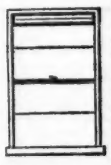
SOHO CROWN, SHEET, PATENT PLATE, ORNAMENTAL, and PLATE GLASS WAREHOUSE, 26, Soho-square, London.—ALFRED GOSLETT begs to call the attention of the trade to his large and valuable STOCK of the above descriptions of GLASS, which he can offer at the very lowest wholesale prices, delivered either in crates, as manufactured, or cut to size and glazed.

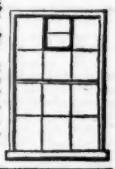
E. and W. H. JACKSON beg to call the attention of Builders and the trade to the reduced prices of their PATENT PLATE GLASS, which, from its cheapness, is now superseding crown in all respectable dwelling-houses. BRITISH and ROUGH PLATE, CROWN, SHEET, STAINED, and ORNAMENTAL GLASS, supplied of the best manufacture, and at the lowest terms. List of prices, estimates, and every information can be had on application at their warehouse, 315, Oxford-street.

THE UNION PLATE-GLASS COMPANY.—Polished Plate-Glass, good quality, colour, and substance, and very much reduced in price. Rough Plate-Glass ¼, ⅜, ½, ⅝, and 1 inch thick; the price of this article is also very much reduced, and in large quantities done exceedingly low. 6,000 feet of small plates, containing about 2 feet super each, to be cleared off, at a very low price.—London Warehouse, 99, Hatton Garden, Holborn; H. CHRISTIE, Agent.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

NAYLOR'S New GLASS VENTILATOR, registered 20th November, 1849, No. 2088.—Its mechanical arrangement admits of the largest amount of ventilation; by means of a small lever it can be opened or shut at pleasure; it is readily applied to the windows of churches, private houses, shops, &c.; to consumers of gas it is of paramount importance, as it effectually allows the egress of heated air, and the admission of the fresh air; it is easily cleaned, and not liable to be put out of order.





Price 20*s.* each under 1 foot sup.: from 1 foot to 2 feet sup., at the same rate; above 2 feet, 18*s.* per foot sup. Sight measurement is required, with the thickness of rabbet. Manufactory, 56 and 57, James-street, Oxford-street.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS. Manufactory, 96, REGENT-STREET and 121, CHANCERY-LANE. Patent sealed on the 4th day of February, 1845, for Fourteen Years, for Improvements in Revolving Shutters of WOOD and IRON, consisting of Six Methods of Raising and Lowering Shutters, without Machinery, and Two for Hinging and Sheathing the Edges of Wood Laths with Iron.—The Patentee having fixed up some hundreds, will feel pleased in forwarding the Testimonials of Architects, Principals of large Establishments, and others, having them now in use, which fully guarantees the Patentee in stating they are beyond dispute superior to any other Revolving Shutter for durability, security, and simplicity, without the use of cog-wheel worm and screw gear, or any other complicated machinery employed by other makers.

BUNNETT and Co., ENGINEERS, Patentees and Manufacturers of REVOLVING IRON AND WOOD SAFETY SHUTTERS, and of ORNAMENTAL SASH BARS, MOULDINGS, STALL-PLATES, &c.. FOR SHOP-FRONTS, AND OTHER WINDOWS, OR SKYLIGHTS, IN BRASS, COPPER, ZINC, IRON, &c.

Shop-fronts completely fitted up and glazed with best plate glass. Metal works and improved machinery of all kinds for warehouses, banking-houses, &c.

BUNNETT and Co. challenge competition as to either quality or price.

Office, 26, Lombard-street, London; Works, Deptford, Kent.

B. and Co. are also Patentees and Manufacturers of Improved Bench and Flooring Cramps for Builders; Wrought Iron Diagonal Gratings, doubly-trapped self-acting Water Closets, and self-acting and self-cleansing Effluvia Traps, for Sewers, Drains, &c. &c.

PAPER-HANGINGS at E. T. ARCHER'S Manufactory for English, and Warehouse for English and French Paper-hangings, and all materials connected with the trade. The Panelled Decorations are fitted up on the walls of an extensive range of show-rooms, giving at one view a drawing or dining-room furnished fit for occupation.

LIST OF PRESENT PRICES.

Painted marble, granite, and oak papers	1*d.* per yard.
Superior bed-room papers	1*d.* ,,
Satin ground papers for bed-rooms, drawing and dining rooms	3*d.* ,,
Flock papers on grounds, and crimson flock on oak	4*d.* ,,
Bronze drawing-room papers	9*d.* ,,
Rich gold paper	18*d.* ,,
Ditto and Flock	24*d.* ,,

10,000 feet of gilt mouldings always in stock.

E. T. ARCHER, 481, OXFORD-STREET, LONDON.

January, 1, 1850.

HORNE'S INDIA-RUBBER PAPER for DAMP WALLS is the cheapest and best hitherto offered to the trade, the price being 2*s.* 6*d.* per piece of twelve yards, and its being entirely free from the unpleasant odour arising from gutta percha and pitch papers, and considerably lower in price, is an important desideratum in its favour.—ROBERT HORNE, PAPER-HANGING MANUFACTURER, 41, Gracechurch-street, City, at the same time invites builders and the trade to inspect his extensive stock of NEW DESIGNS IN PAPER-HANGINGS, which, by the aid of powerful machinery, he is enabled to offer at the following unprecedented prices, in stock quantities, for cash only, viz.:—

Stout lining paper		4½*d*
Superior ditto	6*d.* and 7*d.*	
Bed-room papers, in great variety	at 5*d.*	
An excellent oak paper	at 9*d.*	
Sitting-room ditto, on blended grounds	7*d.* to 9*d.*	per Piece.
Hand-made marbles	1*s.* 0*d.* to 1*s.* 6*d.*	
Good satin papers	1*s.* 9*d.* to 2*s.* 0*d.*	
Rich flock papers (by a new process)	2*s.* 0*d.* to 2*s.* 6*d.*	
Hand-made gravites	10*d.* to 1*s.* 0*d.*	

Every novelty in French and English panelled decoration always on hand; also excellent imitation of fancy woods, superior to any hitherto manufactured on paper.

N.B. Patterns sent into the country, showing the style and quality of the above, on receipt of two postage stamps, and the goods despatched with promptitude on receipt of a remittance to the amount of the order given.—Folding screens in great variety, wholesale and retail.—To be obtained only at HORNE'S Wholesale and Retail Establishment, 41, Gracechurch-street, London-bridge

TO ARCHITECTS.—COMPETITION AND OTHER DRAWINGS.

MR. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen, &c.," and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 31, Great Titchfield-street, Oxford-street.

TO ARCHITECTS.

MR. EDWARD PARAIRE is desirous of meeting gentlemen who require coloured Architectural Drawings, Perspectives, Interiors, Isometricals, &c., got up. Outlines of same, neatly coloured, with background, on terms that will assure approval. Mr E. P. further begs to state that he makes a consideration in his charge should the competition prove unsuccessful.—Address, Mr. E. PARAIRE, 16, Woodstock-street, Bond street.

ARCHITECTURAL SUBJECTS (outlines), coloured for Competition or Exhibition, and embellished with Landscape, &c., Buildings, Portraits, and Views, Lithographed in a superior style, by GEORGE CHILDS, 12, Amwell-street, Pentonville.

PERSPECTIVE.—The true principles of this neglected yet valuable and indispensable science to the Architect, Artist, and Draughtsman, TAUGHT by a Gentleman, in all its varieties till perfect, for One Guinea. Hours, any time from Nine A.M. to Nine P.M. Office near Charing-cross.—Apply to CENTRO, Office of "The Builder," 2, York-street, Covent Garden.

THE ARCHITECTS', ENGINEERS', BUILDERS', OPERATIVES', and ARTISTS' DRAWING ACADEMY, established above forty years, for the study of Architecture, Civil Engineering, &c., with the practical application of Geometry to perspective, ornamental, and mechanical drawing of every description. Conducted by Mr. GRAYSON, architect, surveyor, and civil engineer.—Morning classes from nine till two o'clock daily. Evening classes from six to nine.—For card of terms apply to Mr. GRAYSON'S offices, No. 140, Strand, London.

PIMLICO SLATE WORKS.—Mr. MAGNUS begs to announce that his PRICE LIST of PLAIN and ENAMELLED SLATE for 1850 is NOW READY, and can be had on application at the Manufactory, 39 and 40, Upper Belgrave-place, Pimlico.

STIRLING'S BELVEDERE SLATE WORKS, Belvedere-road, Lambeth.—A reduced list of prices of the best WELCH SLATE SLABS, planed both faces, will be sent on application (post paid) being made, and inclosing a postage stamp. The prices are under those advertised for inferior slates.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico.

GOTHIC WINDOWS, ALTAR SCREENS, and other Works, produced at a remarkably cheap rate.

FONTS from 5*l.* upwards. Specimens on view of the Early English, Decorated, and Perpendicular styles.

ALTAR TABLETS Illuminated.

First-rate ARTISTS retained for SCULPTURED GOTHIC CARVINGS.

MEMORIAL CROSSES, MONUMENTS, TOMBS, HEADSTONES, &c., in great variety of design. Letters cut and complete for fixing in the country.

The Public are respectfully invited to view the carefully selected and manufactured Stock (by improved machinery) of Veined Marble Chimney-pieces—cheap and good.

DAIRIES fitted up with MARBLE or SLATE SHELVES.—MINTON'S Encaustic and White or Blue and White Porcelain Tiles in great variety of pattern.

A GOOD MARBLE CHIMNEY-PIECE FOR FORTY SHILLINGS.

A liberal discount to the trade.

TO BUILDERS, MASONS, AND CONTRACTORS.

TO BE SOLD or BARTERED for in work to be done, under cover, about 3,000 feet of black BELGIUM MARBLE, in slabs and blocks from 3 feet by 1 foot by 3 inches, to 9 feet by 4 feet by 1 foot 3 inches. Also the complete fittings of a gallery front for a church or chapel, 50 feet by 25 feet.—Apply to Mr. SMITH, Thames Bank Depository, adjoining Cubitt's Wharf, Pimlico.

ITALIAN and GALWAY MARBLE QUARRIES.—Depot, Whitehall Wharf, Cannon-row, Parliament-street, Westminster.—TO SCULPTORS, MARBLE MASONS, AND BUILDERS.—Landed per "Flora," Leghorn. Twenty-four blocks of superior white Sicilian; thirty-three blocks of fine statuary blocks of Bardilla, &c. Mr. FRANKLIN, as one of the proprietors of the quarries, is enabled to offer marble upon most advantageous terms. Also, Slabs in Black and Irish Green. Superior Statuary. Black and Gold, Dove, Bardilla, Sienna, Veined Sicilian. An early inspection is desirable.

ANSTONE STONE WHARF, STANGATE.—Mr. GRISSELL has the honour to inform Architects and Builders that he has made arrangements for the SUPPLY of the ANSTONE STONE for all building purposes, and which can now be seen at the above wharf by application to Mr. W. G. WARDLE, of whom every information can be obtained.

N.B. The stone used in the erection of the New Houses of Parliament was supplied EXCLUSIVELY from these quarries.

ANSTON STONE, used for Building the New Houses of Parliament.—W. WRIGHT and Co. beg to inform Architects, Engineers, Builders, and others, the Anston Stone can be supplied in any quantity on the shortest notice. This valuable stone, so celebrated for its durability, colour, and texture, is well known, having been selected in preference to all others, by the Commissioners of Woods and Forests, for building the New Houses of Parliament. It is very superior for Monuments, Tombs, &c. &c.

W. Wright and Co. have made arrangements to have a stock always on hand at Brine's Marble and Stone Wharf, Horsfall-basin, Malden-lane, King's-cross.—Any further information can be obtained on application to W. WRIGHT and Co., Anston, near Sheffield; or to T. SHARP, their Sole Agent in London, 27, Burton-crescent.

CAEN STONE, SELECTED FOR EXTERNAL WORKS.—LUARD, BEEDHAM and Co., Quarry Proprietors and Importers from Allemagne.

AUBIGNY STONE from the Quarries, near Falaise, Calvados Department.—Aubigny is of similar colour to Portland Stone, its texture finer than Portland, price and labour of working about the same.

RANVILLE STONE from Ranville Quarries, near Caen, Normandy.—Suitable for strong works, wharf and quay walling, price and labour similar to Caen Stone.—Depôt, Caen Sufferance Wharf, Rotherhithe; Vauxhall-bridge, Westminster; No. 8 Wharf, Paddington Basin; Northern Wharf, Battle-bridge; and Kensington Basin.—Information and samples supplied from the Office, 18, Southwark-square, Borough.

MARKET WHARF, REGENT'S-PARK BASIN.—Messrs. MARTIN and WOOD (late Scoles and Martin) solicit the attention of Builders, Masons, and others, to their stock of Portland, York, and Derby Stone; also Bangor Slates, Lime, Cement, Plaster, Bricks, Tiles, Laths, Fire-goods, Fire-stone, &c., sold at the lowest possible prices for Cash. Portland Headstones, Ledgers, Steps, Landings, &c., cut to order on the shortest notice. Tarpaulings let on hire. A Stock of Northen's Drain Pipes, Syphons, &c., always on hand. Mortar, Lime and Hair, Fine Stuff, &c.

BATH STONE OF BEST QUALITY.

RANDELL and SAUNDERS, QUARRYMEN and STONE MERCHANTS, BATH.

List of prices, also cost for transit to any part of the kingdom, furnished on application.

BATH STONE.—Messrs. RANDELL and SAUNDERS, Quarrymen, Bath, have appointed Messrs. MARTIN and WOOD their sole agents in London. M. and W. beg to inform Architects, Masons, Builders, &c., that a large assortment of the much approved CORSHAM DOWN and other BATH STONE will always be kept at the Depot, opposite the Great Western Railway Station, Paddington. Orders will also be received at Market Wharf, Regent's-park Basin.

THE CHEAPEST STOVE IN THE MARKET.

CUNDY'S PATENT HOT-AIR VENTILATING STOVE,

FOR WARMING AND VENTILATING

CHURCHES, CHAPELS, SCHOOLS, HALLS, STAIRCASES, AND PUBLIC AND PRIVATE BUILDINGS,

Is the ORIGINAL OPEN FIRE STOVE which introduces the PURE EXTERNAL AIR, conducting it through the interior of the Stove, which is made of fire-clay, and warming it in its passage, thereby supplying any apartment with A CONTINUOUS STREAM OF PURE WARM AIR. It can be purchased of the sole Manufacturers,

J. E. DOWSON AND CO., STINGO IRON WORKS, STINGO-LANE, MARYLEBONE,

at the following GREATLY REDUCED PRICES, viz., A STOVE calculated to WARM and VENTILATE dry BUILDINGS of the following cubical areas :—

	Cash Prices.	Credit Prices.	
From 5,000 to 10,000 cubic feet	£6 0 0	£8 0 0	or 25 per cent. off the credit price for cash on delivery.
From 10,000 to 50,000 cubic feet	9 0 0	12 0 0	
From 50,000 to 100,000 cubic feet	12 0 0	16 0 0	

A PROSPECTUS explanatory of the merits of the Stove, and containing numerous highly respectable TESTIMONIALS of its efficiency, NONE OF WHICH WERE OBTAINED UNTIL AFTER A WINTER'S TRIAL, will be forwarded upon application to J. E. DOWSON and Co.

TESTIMONIALS.

From the Rev. J. D. FROST, B.D., Minister of St. Paul's, Winchmore Hill.

Winchmore Hill, October 23rd, 1848.

DEAR SIR,—After one winter's experience of your stove in St. Paul's Chapel, I feel no hesitation in saying that it may fairly claim a place in the first rank, among the inventions for warming churches. Before adopting your stove, I made extensive inquiries, both as to the different kinds of stoves in use, and also as to the hot-water system. Inconveniences of one kind or other I found practically experienced under the various systems which I witnessed; but I really have not one inconvenience or objection to allege against your stove. I believe it to be more powerful than any other stove of the same dimensions and expense; and it is far more agreeable in a church than any other with which I am acquainted.—I remain, dear Sir, yours truly, J. D. FROST.

From the Rev. Dr. VIVIAN, Minor Canon of St. Paul's, and Rector of St Peter-le-Poor, Old Broad-street.

SIR,—I have no hesitation in bearing testimony to the excellence of your stoves: in producing an equal degree of warmth over the whole of a large building, and in promoting ventilation, I consider them unrivalled. They are also the most economical I have ever met with. My church, which was notoriously one of the coldest in the metropolis, has, since the introduction of your stove (one of the largest size), about twelve months ago, become perfectly warm and comfortable.

I am, Sir, your faithful and much obliged servant,

J. W. VIVIAN, D.D.

THE STOVE MAY BE SEEN IN OPERATION AT THE MANUFACTORY, AT KING'S COLLEGE (WHERE SEVERAL HAVE BEEN FIXED), AND AT MESSRS. HITCHCOCK AND ROGERS'S, ST. PAUL'S CHURCHYARD.

PIERCE'S PATENT PYRO-PNEUMATIC STOVE GRATE

FOR WARMING

CHURCHES, CHAPELS, INFANT AND OTHER SCHOOLS, PUBLIC BUILDINGS, PRIVATE DWELLINGS, &c. &c.

Is SELF-ACTING, and combines SUMMER WARMTH, PERFECT VENTILATION, SIMPLICITY OF ARRANGEMENT, NOVELTY OF PRINCIPLE, and ELEGANCE OF DESIGN, which, with great ECONOMY IN USE, renders this GRATE suitable for any situation where a POWERFUL DEGREE of WARMTH and the CHEERFUL OPEN FIRE are desirable.

PIERCE having at length succeeded in producing that long-sought *desideratum*—a HEALTHFUL AND SALUBRIOUS atmosphere, such as is felt on a pleasant summer's day, which can, by means of this his Patent Pyro-Pneumatic Stove Grate, be enjoyed during the most dull and dreary of our winter months. The above invention is specially adapted for warming churches, infant and other schools, railway offices, entrance halls, banking houses, &c. &c., or any situation where warmth and purity of air are desirable.

IT MAY BE SEEN IN DAILY USE AT THE PATENTEE'S SHOW ROOMS;
also at the

SOCIETY OF ARTS, the POLYTECHNIC INSTITUTION, UNIVERSITY HALL, WESTMINSTER CHAPEL, BUCKINGHAM PALACE, &c. &c.

Innumerable References and Testimonials, with Prospectuses, may be obtained at

PIERCE'S MANUFACTORY 5, JERMYN-STREET, REGENT-STREET.

TO BE DISPOSED OF, A HANDSOME CAST-IRON CASING for an OPEN FIRE STOVE, surmounted by an elegant vase, well suited to form an ornamental heating apparatus for a nobleman's hall, or large public building. It has one fire grate, but may be adapted for two or four if desired. The above was purposely designed and made for the Manchester Athenæum.—May be seen in London, on application (by letter) to Mr. JOHN ASPINALL, Engineer, at the Office of "The Builder," 2, York-street, Covent Garden.

SYLVESTER'S GRATES.—These Grates do not now require either description or recommendation their unequalled comfort and economy in fuel having been tested with perfect satisfaction, by numbers of the nobility and first families in the kingdom.

The improvements recently patented do away with the necessity of an ashes-pit, and obviate all difficulty in fixing. They are made in every style of elegance, from the specimen exhibited by the Society of Arts in London in 1848, and in the Birmingham Exposition of this year, down to the most inexpensive form for a bedroom.

May be had from the Manufacturers, through the Ironmongers generally in town and country.

IRON FOUNDRY, 80, Goswell-street (late of Brick-lane, St. Luke's).—J. J. JONES having made great additions to his STOCK of PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns Girders, Railings, Gates, Iron Coping, Balconies, Window Guards, Verandahs, Ornamental Staircase Panels, Iron Staircases, Tomb Enclosures, Trellis Panelling, Lamp and other Brackets, Cantilevers, Newel Bars, Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.

BAKER'S OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

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Solicit the attention of the Trade to their extensive Stock of PATTERNS for CASTINGS of EVERY DESCRIPTION, either structural or ornamental.

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Plain and Ornamental Vases 20 per cent. cheaper than Terra-cotta.

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Call the particular attention of Architects, Builders, and others, to their patent process of galvanising, or coating iron with PURE ZINC, which, from its action being chemically true, effectually and PERMANENTLY prevents RUST. The process is applicable to all sorts of iron work (whether cast or wrought) in use for building purposes—such as ROOFS, gutters, girders, floors, WATER or GAS PIPES, railings, window sashes and guards, blinds, skylight frames, chimney cowls, cisterns, screws, nails, locks, keys, chains, wire guards, &c., &c., &c. The Company undertake to supply GALVANIZED IRON, or to GALVANIZE every description of iron work, in any quantity required.—Particulars and prices at the Offices of the Company, 3, Mansion-house-place. London Galvanising Works, Millwall, Poplar. S. VINCENT, Secretary.

N.B. This Company's patent process is applied to the roofs of the New Houses of Parliament, the sheds in the dockyards at Woolwich, Portsmouth, and Devonport, the Waterloo Station belonging to the London and North-Western Railway Company at Liverpool, and numerous other railway stations, &c., &c., with the most perfect success.

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Of the Corrugated Iron Beams, Girders, and Fire-proof Floors; MANUFACTURER OF IRON ROOFS AND BUILDINGS, Chiefly of
THE PATENT GALVANIZED IRON.

This material has been employed by J. H. PORTER for several years past in the construction of Iron Roofing for RAILWAY STATIONS and DOCKYARDS, at home and abroad; FARM BUILDINGS, FACTORIES, GASWORKS, WAREHOUSES, &c.; SUGAR-HOUSES, MEGASS and COFFEE-SHEDS, STORES, DWELLINGS, and MARKET-PLACES, in the East and West Indies, China, at the Cape of Good Hope, and in other parts of the world; Iron-bar and Strained-wire Fences, Sheep and Cattle Hurdles.

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Their stock of goods for GENERAL IRONMONGERS is unequalled for variety and lowness of price: comprising, range, register, and elliptic metal and stoves, rain-water pipes, O. G., and half-round guttering, sash-weights, railing bars, panels, bakers' oven work, sink traps, air bricks, water-closet metal, &c. &c.

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Cottage Ranges, with Ovens and Boilers, 3 ft. 2 in. 40s.; 3 ft. 4 in 42s.; 3 ft. 6 in., 44s. 3 feet Cottage Ranges, 38s.

Self-acting Ranges, with Circular Oven and Back Boiler, best Wrought Bars and Bright Fittings,

3 ft., £2. 18s.	3 ft. 6, £3. 7s.	4 ft., £3. 15s.

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4½d.	5d.	7d.	10d.	1s. 3d.	1s. 8d. per 1,000
3d.	4d.	6d.	8d.	10d.	20d.

Best Sheet Floor Brads, 12s. 6d. per cwt.

Best Town Glue 33s. Do. Scotch, 52s. per cwt.

Best Patent Sash Line.

4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	12s. per gross.
1	2	3	4	5	

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Strong Self-acting Kitchen Ranges, with Back Boiler and Oven and Wrought Bars:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£3.	£3. 10s.	£3. 15s.	£4.	£4. 10s.

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£5. £5. 15s. £6. 5s. £6. 10s. £7.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.

Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.

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JOHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.

Black Registers, from 6d. per in. and upwards.
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3 ft., 2l. 8s.	3 ft. 6 in., 2l. 15s.

Elliptic Stoves, with double backs, 3d. per in.

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 8s. per pull.

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	2	2½	3 Inches.
Cast Butts	5d.	9d.	7s. 6d. 11s. per 6 dozens.
Cut Clasp	5d.	7d.	1s. 2d. 1s. 8d. per 1,000.
	4d.	6d.	10d. 20d.
Nos.	3	4	5 6
Patent Line	6s. 6d.	7s. 3d.	9s. 10d. 12s. per gross
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Rain Pipe	11d.	1s. 1d.	1s. 2d. per yard.

TO BUILDERS, CABINET-MAKERS, and OTHERS.—Best Cut Sheet Flooring Brads, 13s. per cwt.

Fine Cut Clasp and Rose.

15s.	14s. 6d.	14s.	13s.	13s. per cwt.
1¼	1½	2	2½	3 inch.

Cross Garnet Hinges, per dozen pair.

2s. 9d.	3s. 3d.	4s. 3d.	5s.	6s.	8s.
10	12	14	16	18	20 in.

Best Bright Tower Bolts, per doz.

1s. 3d.	1s. 7d.	2s. 2s. 6d.	2s. 10d.	3s. 3d.	3s. 7d.
3	4	5	6	7	8 9 in.

Iron Rain-water Pipe.

9½d.	10½d.	1s. 1d.	1s. 5d.	1s. 8d. per yard.
2	2½	3	3½	4 inch.

Best London Glue, 38s. per cwt.
Cast Lath Nails, 10s. per cwt.
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Hooping for bond, 8l. 10s. per ton.
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Best Cut Sheet Flooring Brads, 12s. per cwt.
Fine Cut Clasp and Rose.

15s.	14s. 6d.	14s.	13s.	13s. per cwt.
1¼	1½	2	2½	3 inch.

Best Bright Tower Bolts.

1s. 3d.	1s. 7d.	2s. 2d.	2s. 6d. per dozen.
3	4	5	6 inch.

Best Patent Sash Line.

4s.	4s. 6d.	6s.	7s. 3d.	9s.	10s. 9d. per gross.
No. 1	2	3	4	5	6

Cast Lath Nails, 10s. per cwt. Sash Weights, 5s. per cwt.
Air Bricks, 3s. 6d. per dozen.

DR. ARNOTT'S VENTILATORS.

11 by 8 inches	5s. each.
16 by 9 "	8s. "

An assortment in Brass, Bronzed, Gilt, &c.

An extensive stock of Mortise Locks, Drawback Locks, Iron Rim Locks, and Latches, of every description, at very reduced prices; also Door Furniture, in china, amber, crystal, ivory, ebony, buffalo, horn, brass, &c., with Finger-plates, Bell-pulls and Levers *en suite*.

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Strong Elliptic Stoves, with extra back, 2½d per inch. Register Stoves, 5d. per inch.

Three-feet Self-acting Cottage Ranges, 36s. each. Best Self-acting, with Wrought Bars and Bright Fittings, 58s. each.

Cast Rain-water Pipe.

9d.	11d.	1s. 1d. per yard.
2	2½	3 inch.

Gutters, 4 inch, 9d. per yard.
Best Cut Clasp and Rose.

15s.	14s. 6d.	14s.	13s.	12s. 6d. cwt.
1¼	1½	2	2½	3 inch.

Sheet Flooring Brads, 11s. 9d. per cwt.
1-inch Cut Lath, 14s. per cwt. Cast Lath, 9s. 6d. per cwt.
6-inch 2-bolts Rim Locks, with Scotch Springs, best furniture, patent spindles, 15s. a-dozen.
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Improved Bow Latches, with best furniture, 7s. a-dozen.
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